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AGRICULTURAL HISTORY

The Quarterly Journal of the Agricultural History Society

Agricultural History is designed as a medium for the publication of research and documents pertaining to the history of agriculture in all its phases and as a clearinghouse for information of interest and value to workers in the field. Materials on the history of agriculture in all countries are included, and also materials on institutions, organizations, and sciences which have been factors in agricultural development. The Society is not responsible for the statements or opinions of contributors.

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AGRICULTURE IN OUR ECONOMIC HISTORY

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A decade and a half ago a volume of essays in honor of one of the most distinguished of American economic historians, a former president of the Agricultural History Society, Edwin F. Gay, was issued under the title, *Facts and Factors in Economic History*. In viewing this imposing tome amidst the exhibits of masters old and recent in the economic-theory press, and even more in consulting its stimulating contributions, the reader, without in any way aspiring to be an eager new-viewpointer or an ardent revisionist, might readily think of negatively contrasting alliterations, such, for instance, as fables, foibles, fancies, follies, and fictions—aberrations recognized, by implication at least, in the critical evaluations throughout this same festschrift. Such indicting characterizations, which might too readily be applied to economic history in general, have abundant exhibits in our agricultural division, ranging as they do from subjects dealing with the acquisition and settlement of the land to those involving the disposal of its surpluses. As usual such errancies and distortions are traceable in large and quite obvious part to incompleteness and inadequacy of investigation—or, as the phrase is, to limited spade work. That there is such an essential lack, not only in completed research but even in preliminary explorations, the findings of the conference on agricultural history called by the United States Department of Agriculture in 1939 and the reports of the committees on fields of research of the Mississippi Valley Historical Association and of this Society issued four years later all conclusively demonstrate.

However, it would seem that hardly less of error and misconception has arisen in the history of our national economy from an unreal and overformalized organization that openly defies the old composition trilogy of unity, coherence, and emphasis. Investigators in agricultural history, as in other branches of the economy, have concentrated too narrowly and self-containedly upon their area, or it may be even upon some subdivision of it, with little or no recognition of interrelations with other areas and consequently with the national economy as a whole. Such exclusive treatment misses the main aim of showing the unique features of this particular interest and appraising rationally its contribution to the life of the Nation.

Thus, in symposia on a century or other convenient stage of economic progression, each particular branch exhibits its achievements like competing drill teams with ineffective coordination by editorial interlocutions. Manuals as always follow the patterns of the master craftsmen. The conventional organization, only varied in detail, traces lines of endeavor through convenient time divisions with perhaps here and there a gesture at "incidental correlation." Synthesis into a real working economy may be finally essayed amid the cataclysms of war or depression and in a concluding summary statement of a "progress" which tends generally to consist of the substance of things wished for and not seen. Unhappily the results extend beyond a mere slip in academic judgment, little noted or long remembered. Students take this piecemeal and formalized bookish survey of their world of business into life relations, with no distinct and thought-out understanding of a total economic order and with their prejudices and preconceptions for certain small segments of it confirmed rather then corrected.

But, it may be urged, the "basic industry" is wholly different, apart from others, *sui generis*, and hence the history of its techniques, institutions, and public relations must be treated as something distinct and apart from that of the rest of the economic order. Assuredly the farming business has its unique features but so do all other enterprises in their peculiar potentialities and limitations, natural and social. All members of the economy are different, but all are affected in their several ways by the natural and social forces of the time, and all are interrelated in the making of an economic system. The total economy, its conditions and per-

The presidential address presented with the title, "Parity in Our Agricultural History," at the annual meeting of the Agricultural History Society in Washington, D. C., on September 3, 1947.

formance at a given stage, is the concern of economic study; and the explanation of the emergence of such a totality is the task of the economic historian.

At all stages of our emerging Nation the attainment of a balanced national economy has been the objective of our political and social leaders of reasoned foresight, of our successive groups of planners, to use that current term: the English mercantilists thinking in imperial terms, the Federalist centralizers, the practical designers and theoretical defenders of the American system, the free-soil adapters of that program, the progressive nationalists, and the new dealers. The Hamiltonians and Jeffersonians had the common aim of balance and stability but differed in their views as to the attainment of the desired regime.

The development of a national economy, with varying degrees of balance, is thus the central theme of American economic history as a whole as it must be of its various branches. Consequently the failure to interrelate the forces of change through the years in the different areas of the economy is to be partial and hence unrealistic. The loose use of the term "revolution" to characterize impressive changes in production and distribution is misleading, not only in exaggerating the time, nature, and extent of the changes, but in failing to recognize the concurrent operation of the modifying forces in all the different areas and the interaction of changes in one area upon the others. However arrestive and suggestive such terms may be, they cannot be held to the actualities of production and distribution and thus are not verifiable history. For the same reason the division of modern history, on the basis of assumed dominant interests, into agricultural and industrial eras, fails to recognize adequately the cardinal influences affecting, in various ways and degrees, all phases of economic life.

That the agricultural interest has been a direct coordinate participant in every successive stage of the Nation's economy the most cursory survey discloses. In the colonial era a large proportion of economic needs was supplied by a self-sufficient economy in which simple and crude cultivation was carried on along with equally simple and crude extractions and manufactures. Production for the market in all these fields was brought under a more or less exploitive system of commercial capitalism.

The first half of the nineteenth century was a regime of small capitalism characterized by the beginnings of mechanization, small-scale production, and rudimentary marketing facilities. Alike in country and town, occupational grouping was still unspecialized, and status was impermanent and transitional, as characteristic trade and business designations illustrate: merchant capitalist, mill owner (for manufacturer), ironmaster, planter, of various grades, squire (for large landed proprietor), peddlers (of general and special wares and of widely varying size of stocks), and generic mechanic with numerous subdivisions of smiths and wrights. Economic aspiration went along with social and political equalitarianism. The tradition of proprietorship retarded a labor class consciousness. The "industrial classes" for whose betterment various movements were launched were understood to include farmers, proprietary mechanics, laborers, clerical workers, and even at times small merchants and professional men. Agrarianism as a doctrine and program appealed mainly to city workers. Many early labor organizations were open to employers, and agricultural societies were headed by doctors, lawyers, bankers, and merchants.

Business undertakings of the period were curiously interrelated. In the South planters, merchants, and leading professional men were interlocked in interest and often in investment. In the Northeast professional men, even clergymen, in hamlets and small towns owned and operated their farms. The larger landowners or "squires" more often than not combined with their farming, milling (lumber, grist, or fulling), storekeeping, and moneylending, along with public officeholding. In the West law, land promotion, and banking were integrated by single firms, while others combined merchandising, produce buying, meat processing, and loan agencies. Business institutions in general —commercial banks, insurance, credit-rating agencies, primary markets, stock and produce exchanges, and specialized retailing concerns—were all in a rudimentary state. The corporation was fast emerging but not yet in dominant position. Public utilities were still looked upon as wholly beneficent. Lincoln's retainers and passes from later "Granger roads" were in no way a political handicap. Before the rise of systematized security and produce exchanges, land remained the most available source of speculation for all classes of risk takers.

In all of these transitional conditions in production, marketing, finance, and living standards, the farming business participated, but in no special or peculiar sense; it was passing through the same rudimentary stage as the other branches of the

economy, then as later, relatively more emphasized in some regions than in others. In those simpler days, the shop, the store, the mill, the small factory, and often the professions, with offices in dwellings, were as much a "way of life" as was the farmstead. All business and living conditions reflected the undifferentiated and unspecialized functioning of the precapitalistic society, and all participated, in their special manners and degrees, in the new industrial transformation.

Whatever its relative rating, the agricultural enterprise, in its various specialties, has been a distinct and coordinate phase of "modern industrialism." The tendency to treat the farm and its problems as something apart and essentially different from the characteristic phenomena of business enterprise runs counter to the basic facts and conditions of modern rural economy. A typical farm undertaking, in its essential area of the national economy, is as fully and characteristically a participant in modern technology and enterprise as is an integrated manufacturing combination, a key utility, an imperial banking house, or a chain distributor or servicer. It has the same central problem as the others of adjusting expanding production to a fluctuating demand at home and abroad. The farm and the farm home, when meeting recognized standards, have become fully mechanized in every operation and service; the expression, "the farm, a factory," is neither fanciful nor wishful but a reality. The three fairly distinct stages in the Industrial Revolution, distinguished by meticulous students, have had corresponding and equivalent attainment in the transformation of agricultural technique. As a matter of fully verified record, technology, that all-embracing term for the impact of science upon the world's work and play, has taken over the progressing farm at every point, as it has all other typical forms of satisfying economic wants, and with the same general sets of problems: specialization, standardization, labor displacement, capital apportionment, credit provision, and market adjustments. As with all other modern businesses, managerial and entrepreneurial functions have of necessity been increasingly emphasized. Thus, like other enterprisers, the farmer has passed from the securities of a simple primitive economy, such as they were, to the risks and hazards of a matured, complex, and geographically and functionally interrelated world order.

In an age of combination and consolidation, agriculture, as a whole and by commodity groups, was forced to provide its own equivalent in organized effort. As in the experience of the other leading interests, early crude and faltering trial and error in types and methods of collective action was to be replaced by increasing effectiveness in associated controls and in the determination of governmental policies. An evidence of the extent of the influence of farmers' organizations has been in the opprobrium that at times they have shared with other "big business" interests. Hence today there is a peculiar irony in the dictum of elemental economics of a generation ago that the combination movement had and would extend to all lines of business except two—retail merchandising and farming.

Organized efforts, general and special, regional and national, reflected and in turn accentuated the tendency, inevitable under capitalistic enterprise, toward class divisions within the occupation. As in other undertakings such divisions have been accelerated and intensified by the readjustments from war and depression. Rural economy and society no less than urban has its problems of small business and big operators. The countryside has its underprivileged, indigenous or migratory, its fringe of unemployed, and its slum dwellers.

Hence no assumption could be more directly contrary to fact than that implicit in discussions of "*the* agricultural problem" or the status of "*the* farmer." During the Great Depression some current history commentators concluded that the farmer was doomed to economic ruin (as indeed many of them were, along with industrialists, merchants, and bankers), while others predicted reduction to a degraded peasantry, or at least to a subsistence basis of existence. Somewhat more realistic were the economists who distinguished between the marginal and submarginal producers, but they greatly oversimplified the conditions by ignoring the great variations between regions and systems of production and, like the overenthusiastic city slum clearers, they disregarded the interrelations between the urban and rural labor supply. The recent controversy in a congressional committee hearing regarding the prevailing living standards of the agricultural population indicated the marked diversity of rural living conditions. Clearly any forecast or plan based upon an assumption of relative unity in status and opportunity runs directly counter to the facts of geography and demography.

Social institutions and standards of the countryside have been transformed through the years by the same general technological and intellectual influences that were making over the cities, physi-

cally and psychologically. Rural society pictured by Donald G. Mitchell on the eve of the new industrialism differed as much from that of the next generation as did the city ways of William Dean Howells, Henry James, and Edith Wharton, while the country professions, institutions, and folkways of the past generation so nostalgically revived in recent best sellers are as dated as George Apley and the Ambersons. Both areas reflect, in their own ways, the changing climate of ideas and the consequent attempted adjustments. The Nation's basic problems of education, morals, recreation, health and sanitation, social security, and law and order have tended to be the same in town and country; and in dealing with them both areas have come to require ever extending kinds and degrees of social aid and control.

In governmental relations through the years the "myth of rugged individualism" applies to the cultivator and husbandryman no less than to the industrialist and financier. If the modern capitalistic system has brought the farmer a burden of indemnities and disparities, he has sought and secured, more or less, bounties and protection in carrying on his business; but, like all other businessmen, he has wanted freedom from supervision and direction in the way he has carried it on. The frontiersman sought and obtained, by one means or another, land, credit, public works, and markets all adjusted to his needs or desires. In seeking these ends agriculture joined more or less concertedly and effectively with other interests. Western farmers supported the early protective tariff under the appeal for a home market, and Ohio wool growers joined with Pennsylvania iron manufacturers to inaugurate the modern system of economic nationalism. The support extended to sugar producers, cane and beet, in conjunction with the refiners, can match public favoritism in any other area.

In further protecting their rights organized farmers first sought to apply the powers of the States to the regulation of public utilities but later, at a more highly commercialized stage, something of the same regulation was to be given to their own production and distribution. In the federal realm the agricultural business was free from all effective restraint and regulation down to the 1880s, but so were all the others, and the meat raiser, not the transporter or processor, was the first to be subjected to supervision. Again, on the side of aid and promotion, in the establishment of clientele departments, agriculture showed the way for commerce and labor and encouraged the persistent agitation for such recognition by other interests.

Like labor, organized agriculture has found operation through the old-line parties, at times in cooperation with other interests, far more effective than the formation of a separate occupational party. No less for farmer than for labor political leaders, the chief endeavor has been to secure united action in the face of differences—class, regional, and commodity—in their potential constituency. Such inherent divisions within the occupation, as well as opportunistic collaboration with other interests, manifest the inappropriateness of the somewhat whimsical classification of our party policies as "rustic and urbane." Certainly there never has been a specific set of "rustic" proposals which has commanded the support of the bulk of farmer voters. And a rural constituency, as many notable instances have shown, does not insure opposition to measures sought by urban interests or the support of all policies that are clearly beneficial to rural.

While it is evident that in the primitive undifferentiated era and in the formative industrial stages the agricultural enterprise was closely related to the others and its history not to be fully understood apart from that of the others, as the matured economy has become increasingly complex and subjected to the supreme tests of war and depression, that relationship has become inextricably and progressively established. Economic planning postulates the best balance of interests. Regional programs seek the fullest utilization and coordination of all resources and managerial efforts. Synthetic industries tend further to integrate farm and factory. Decentralized adjustments in working and living tend to break down differences in outlooks, attitudes, and opportunities. Industries, more and more, seek the abundant space, lower taxes, and reduced living costs of the open country. The city commuter from suburban farm boasts of his fine stock and superior fruit and vegetables and, whatever his political and social philosophy, accepts his support checks with his fellow "farmers." The successful farmer, for his part, may buy industrials rather than land to satisfy his speculative urge, while the city "businessman" buys farm land as a hedge against the results of such urges.

With the waning of home processing and the

extension of utilities and other services, the farm is decreasingly a peculiar unit of living. The family-size farm is being steadily adjusted by modern technology to the desires and standards of the farm-size family.

With all the emphasis of rural social leaders through the years upon a distinct open-country culture, the prevailing town ways and standards, perhaps one might better say the common national ways and standards, prevail. Well may the national advertisers ask, "Which is the country girl?" The crossroads settlement is bypassed and its function superseded or subordinated by the trunk and market highways, and city and country are increasingly merged in activities and interests. The old general store becomes a filling station and possibly a curio shop; chautauqua and camp-meeting grounds, tourist camps; the village tavern, a roadhouse; and many a big meadow of ancestral pride, an airport, golf course, ball ground, or amusement park. David Grayson, in wanderings in "modernized" rural areas, would seek in vain for freedom from either physical or social turbulence. The traditional "rural versus urban" basis of conflict—never as clear-cut as represented—thus becomes a factor of decreasing influence, with the more realistic interests and motives—economic, social, and political—that cut across any such an alignment.

In briefest summary, such are the trends for our agricultural historians to amplify and interpret—and, it may be asked, to what end? At the agricultural history conference of the United States Department of Agriculture in 1939, it was affirmed that the historian could be of direct service to the experimental scientist as collaborator or adviser. At once it must be recognized that whatever contribution the historian can make will be in the proper realm and according to the peculiar method of history rather than of technology. He will not seek to provide a sequential record of facts and phenomena in technical developments, nor will he undertake to give answers, on the basis of possible historical evidence, to technical controversies, over which the scientific doctors differ. Such matters can be more appropriately and competently dealt with by the specialists themselves, using as they may historical techniques in so far as they are essential to their particular purpose.

Rather the historian's task will be to trace the successive stages of development of the agricultural phase of an emerging national economy and society, showing the interrelations with the other phases and explicating the influences, at home and abroad, involved in the cardinal changes. In rendering this service the historian will be as "objective" and impartial as any of his fellow "scientists." His aim will not be that of exalting or depreciating an essential part of the total economy. Assuredly the undertaking will not involve an exploitation, in the name of serious history, by spectacular radio or cinema drama, or by sumptuously designed, vividly written, and graphically illustrated brochure, of the occupation's surpassing contributions to the Nation's security, prosperity, and general uplift. Much less arresting and intriguing but in the real spirit of scientific research, the historian will seek by reproducing past conditions and relations, as fully and exactly as the evidence permits, to secure the reality that alone constitutes the agricultural facet of a balanced, rounded-out American economic history.

IRRIGATION AND LAND USE IN ANCIENT MESOPOTAMIA

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Ancient man divided the natural world about him into four basic elements: earth, fire, water, and air. By doing so, he recognized the principal aspects of his being. Earth represented the dead, the inanimate, the immobile; fire, the process of generation and mutability; water, the ever-moving, the fluidity of all things; and air became the unknown, the spiritual, the repository of all the mysteries of life. Behind this philosophical explanation of his universe, ancient man during various stages of his cultural development undoubtedly understood how each of these elements, alone and in concert with the others, was actually concerned with his being, how each had its place and its pur-

pose in the sustenance of human life, and, actually, that each was necessarily a product of independent discovery for use.

Early in his cultural history, in the early half of the Paleolithic age, man knew the natural phenomenon of fire; and early he learned to control it for his own use. Fire thus became early in his history a cultural weapon and tool which man found vital for his immediate existence and subsequent advance to his position as "Master of the Planet." Much later, man, forced by circumstances over which he had no control, found that the earth, too, was capable of protecting him and nourishing him in his struggle for existence; he found that the earth was capable of multiplying, under care, his scanty stocks of collected seed and, by that multiplication, capable of furnishing him the food of which he was deprived by the vanishing herds of wild game.

For the development of man, the control of natural water resources and the utilization of water so controlled for the development of agriculture were no less important than either the discovery of the practical uses of fire or the discovery of the potential productivity of the earth or land. To the rise of civilization, the man who first harnessed the unbridled supplies of water was as important as that long ago Prometheus who first stole from the gods their dearest possession, fire.

The natural forces that hold sway over the planet conspired long ago to make of the lower valleys of the Euphrates and Tigris rivers—that dry and barren desert of today—the experimental station for the first successful attempt to control the whims of the waterways and to make those two great streams of water servants of man. There is ample evidence to indicate that when the last great glacier lay over the face of most of Europe, the deserts of today—the Sahara, the Arabian, and Mesopotamia—were forested areas with adequate rainfall for the sustenance of the forests and with large populations of animal life. So long as such conditions remained, the human inhabitants of these areas were able to procure as much food as they wanted merely through hunting, fishing, and collecting. Ancestral pigs roamed wild through Palestine and the cave-dwelling Natufians of that land needed only to go a short distance from their caves to sickle the grains that grew wild. As the glacier, however, slowly receded to its extinction in the far north, the rain belts that had made a paradise of the Mediterranean region followed after it; and the forests with their animal populations began to dwindle and disappear. Faced with the prospect of losing his natural food supply, man slowly turned to horticulture as the only means by which he could provide himself with the food he needed. But since an ample supply of water was needed for even the most primitive of horticultural experiments and since that supply was only to be found in the valleys of the few existing rivers, horticulture with all of its social ramifications survived only in the Nile Valley, the Tigris-Euphrates Valley, and in the valley of the Indus.

The purpose of this article is to indicate in some small way the great degree to which the control of the waters of the Tigris and the Euphrates rivers was an important factor, not only in the maintenance of horticulture and agriculture in the valleys of those rivers—Mesopotamia—but also in the building of the social fabric of the people who benefited from that control.[1] A study of the land of Mesopotamia and its use through the thousands of years since it was first settled provides a clear-cut picture of the interaction between man and his environment; it shows in clearest detail the advantages both to man and nature when the balance is maintained and, conversely, the destruction and woeful loss when that balance, that interaction, is broken.

A glance at a map of Mesopotamia or, better still, a cross section of the earth's crust on a line drawn between the two rivers will show the strange quality of the land's formation.[2] Were an observer placed on some convenient peak in the vicinity for the past seven thousand years or so, he would have been able to see the land grow: from sea expanse, to marsh, to desert devoid of growth, to fertile land thick with a waving mass of grain and studded with thriving communities, and back to desiccated desert once more.

[1] This article is intended to give a general picture of irrigation practices and land use in Ancient Mesopotamia and their effects on the inhabitants of the valley. Technicalities of archaeological investigation have wherever possible been avoided in the interest of the general subject. I am indebted to Professor Paul B. Sears through whose encouragement this study was made.

[2] Concerning the strange dichotomy of land growth existing in Mesopotamia, Seton Lloyd, *Twin Rivers* (Oxford, 1943), 24, says: "Anyone who has motored northward from Baghdad in wet weather will recollect his relief at passing from the alluvial mud to the pebbly conglomerate, between Beled and Samarra."

Mesopotamia, the land lying between what is now the Persian Gulf to the east and a line drawn northeast to southwest through Baghdad to the west, is a new land, a land built out of the western reaches of the Persian Gulf by the action of the two great rivers in the last seven or eight millenia. It is strangely appropriate that these two rivers which built the land should later, with the aid of man, play such an important role in its physical and cultural productivity.

Mesopotamia is actually one immense delta which yearly extends itself into the receding Gulf. The ancient city of Ur which was founded about 4000 B.C. on the still marshy extreme limit of the Gulf and which throughout its history served as a seaport for the expanding Sumerian commerce now lies over a hundred miles inland; Basra, a modern Iraqian port on the Shatt-el-Arab, formed by the junction of the Tigris and Euphrates rivers, was founded in the early centuries of the Moslem empire as a Gulf port city, and now it lies about 30 miles inland; and even Babylon and Samarra, now located far upstream from the Gulf, were probably at one time in their early histories port towns on the shore of the much larger Persian Gulf.

The Tigris and Euphrates rivers rise in the highlands of Anatolia in the areas of eastern Turkey, northern Syria, and northern Iraq, and flow roughly parallel to each other diagonally across Iraq to the Gulf. For the thousands of years since their origin, these two rivers have been moving the mountains to the sea, picking up their loads of alluvium at or near their origins while still swiftly flowing streams and depositing the potentially fertile soil as the speed and consequent carrying capacity lessened upon meeting the relatively unmoving mass of water that was the Gulf. The land even now has the appearance of a new land. It is a flat plain, its desolateness only occasionally relieved by the rows of palm trees which thrive on the banks of the two rivers and their few tributaries and by the scattered and forlorn mounds of earth that hide the valley's former greatness. Here there is not the sand of the Sahara, but an alluvial soil that, once alive and generative, is now dead and desolate, mute witness to the worst of the cultivator's evils—neglect of the land.

Dorothy Mackay, after a rough and uncharted automobile trip across part of the present-day waste to the ruins of the ancient Jemdet Nasr, described the desolateness of the land today in an expressive statement:

> Beyond the limit of the 'cultivation' [the small area immediately adjoining the rivers], we seemed to plunge all at once into a strange new world, where all was mirage and unreality. Around us an immense flat waste of fine greyish-yellow alluvial soil was bounded by an unbroken horizon, shimmering like a vast circle of quicksilver, above which, here and there, long, low islets seemed to float in the sky. No vegetation was to be seen except occasional low thorny scrub, against which the driving desert winds had piled dune-like heaps of fine grey sand. Low mounds and ancient canal banks, at first glance all exactly alike, were all that broke the monotony.[3]

I have had the same impression driving between Khorramshahr and Ahwaz in southern Iran, an area which is also a delta plain formed by the Karun River flowing from the Elamitic highlands into the Gulf in the vicinity of the mouth of the Shatt-el-Arab. The area represents a flat treeless expanse with patches of scrub, called by the natives "camel grass" and used by them as a primitive, though effective, method of air conditioning through the hot summer months.

The first settlers into the lower part of the new land probably came from the neighboring and not far distant Elamitic highlands. These early intruders brought with them a cultural complex including a well-developed ceramic technique, sun-dried brick buildings, and, undoubtedly, a knowledge of horticulture. Mackay has suggested that all the ancient Mesopotamian cities were built on the meandering branches of the rivers in the delta so that the waters of the streams might be easily available for irrigation as well as for easy methods of transportation and commerce.[4] At Ur, however, archaeological evidence indicates that the site was settled at a time when the area was no more than a marsh or shallow lagoon with a few perennially dry islands scattered throughout. On these isolated islands, gradually enlarged by artificial drainage and the constant deposition of silt by the rivers, the first settlers built their reed and mud huts, oftentimes on stilts, and cultivated their meager holdings to augment food supplies gained by fishing.[5] It is possible that through the efforts to drain the marshes surrounding them, these early folk in the valley first conceived the idea of providing the land with water as well as

[3] Dorothy Mackay, "Ancient River Beds and Dead Cities," *Antiquity*, 19:135 (1945).

[4] *Ibid.*, 135–144, *passim*.

[5] See C. Leonard Woolley, *The Sumerians* (London, 1930), and Lloyd, *Twin Rivers*.

draining the water away through the use of extensive ditch works.

How irrigation arose in the valley is, however, not known. At an early date in their history, the Sumerians, the first culturally identifiable folk in the lower valley, were probably using irrigation to great advantage in the production of bumper crops. The evidence for irrigation in the earliest days before written records began to attest to the construction of irrigation canals is necessarily indirect. That the land is almost totally unproductive without irrigation is tragically known from experiences of the past few centuries when there have been practically no systems of irrigation at all in the area. Also ascertainable is the existence throughout the lower part of the valley as early as predynastic times (4000–3000 B.C.) of urban communities. Since urban communities presuppose a productive rural population or at least nonurban lands capable of providing sufficient food, it is probable that the lands immediately surrounding the early cities of Ur, Kish, Lagash, etc., were already under heavy cultivation.

Fortunately it is not necessary to rely entirely on the indirect evidence of the urban communities for proof of the productivity of the land. Clay sickles and flint hoes found in the Al-Ubaid layers, the earliest of the predynastic strata (ca. 4000 B.C.) indicate that grain was being grown; and the number of grain tallies recovered from the middle of the predynastic period (ca. 3500 B.C.) testify to the considerable and ever-growing rural-urban commerce in effect at that early date. In fact, one authority has suggested that these grain tallies with their complementary marks of ownership were the immediate ancestor of Mesopotamian writing, the earliest so far known in the history of mankind.[6] He has further maintained that writing, in fact, developed in the Uruk period (ca. 3500 B.C.) as an outgrowth of increasingly more complex commercial relations between those who grew the grain and those who consumed it. At first this commercial interrelation had its center in the temple in an effort to maintain records of production on temple lands; later, writing as a means of keeping accounts crept into the lives of the Sumerian businessmen.

Such an economic and social system which the earliest records predicate had to be based on a division of labor where food supplies for the city dwellers were insured by the productive capacity of the farmer and his rural lands. In the valley, only land that was adequately irrigated could have produced such a continuous and sufficient food supply. As Gordon Childe has noted in this connection,

> The artisans, laborers and transport workers [of the city] may have been "volunteers" inspired by religious enthusiasm. But if they were not paid for their labor, they must at least have been nourished while at work. A surplus of foodstuffs must, therefore, have been available for their support. The fertility of the soil that enabled the farmer to produce far more than he could consume supplied this.[7]

For the later period, after the introduction of writing and the rise of the Sumerian city-state as "a commercial theocracy in which private enterprise had an important place,"[8] we need not confine ourselves to such indirect evidence for either the use of irrigation or the productivity of the land. Contemporary records and art give ample evidence for both.

From the beginnings of the dynastic period in Mesopotamia (ca. 3000 B.C.), throughout the thousand years that followed, countless dedicatory tablets, clay record-cones, and commercial records have been recovered, on many of which the construction of canals to irrigate the land is mentioned. Typical of the earlier lot is the following inscription, ordered by Ur-Nina, an early king of Lagash, who reigned about 2900 B.C.:

> Ur-Nina, king of Lagash, son of Gunidu, son of Gurshar, the house of Nina built. Nina he carved, as a statue he cut. Nina as a statue at the beginning of the year into the house entered. 40 hierodouloi, spouses of Nina, as her chief priests he appointed. The canal Edin he constructed. The women's quarters he built; the seven staged ziggurat he built; the wall of Lagash he built. The god, the king of the city, he carved, he raised up, from the mountain as tribute he brought down.[9]

From the importance given the construction of this early canal in this essentially religious inscrip-

[6] E. A. Speiser, "Some Sources of Intellectual and Social Progress in the Ancient Near East," American Council of Learned Societies, *Studies in the History of Culture* (Menasha, Wis., 1942), 51–62.

[7] Gordon Childe, *What Happened in History* (New York, 1946), 85.

[8] E. A. Speiser, "The Beginnings of Civilization in Mesopotamia," American Oriental Society, *Journal*, 59 (supp.):27 (1939).

[9] George A. Barton, *The Royal Inscriptions of Sumer and Akkad* (New Haven, 1929), 14.

tion, it may be inferred that such construction was not only a secular necessity, but a religious accomplishment as well.

On an inscribed cone, Entemena, a governor of the same Lagash some four hundred years later, recounted in detail his difficulties with the neighboring state of Umma over the rights of the waterways which acted as both irrigation ditches and boundary lines. Perhaps the interest of this inscription, one of the most penetrating regarding the relations of these states to one another, will excuse its length.

Enlil, king of countries, father of the gods,—by his immutable word Ningirsu and Shara delimited their lands. Mesilim, king of Kish, at the command of his goddess Kadi concerning the plantation of that field, set up a stele in that place. Ush, *patesi* of Umma, a plan to seize it formed; the stele he broke in pieces, into the plain of Lagash he advanced. Ningirsu, the hero of Enlil, by his righteous command, upon Umma war made. At the command of Enlil his great net ensnared (them). Their burial mound on the plain in that place he erected. Eannatum, *patesi* of Lagash, brother of the father of Entemena, *patesi* of Lagash, for Enakalli, *patesi* of Umma the land delimited.

That canal from the great river to Guedin he carried. He made a stele, he inscribed it. The stele of Mesilim to its place he returned. On the plain of Umma he did not encroach. (At) the boundary-line of Ningirsu, and, as a great protecting structure, the sanctuary of Enlil, the sanctuary of Ninkhursag, the sanctuary of Ningirsu, the sanctuary of Utu he built. The grain of Nina, the grain of Ningirsu, one storehouse full, the men of Umma by harvesting had eaten; a penalty he caused them to bear; 144,000 *gur*, a great storehouse full they brought. The cutting of this grain was not to be repeated in the future. Urlumma *patesi* of Umma the boundary-canal of Ningirsu, the boundary-canal of Nina drained, those steles into the fire he threw, he broke in pieces; the sanctuaries, the dwellings of the gods, the great protecting structures, the buildings that had been made, he destroyed;

As the mountains he was puffed up; over the boundary-canal of Ningirsu he crossed. Enannatum, *patesi* of Lagash, into the field of Ugigga, the irrigated field of Ningirsu, for battle pressed. Entemena, the beloved son of Enannatum, completely overthrew him; Urlumma escaped; in the midst of Umma he killed him. Of his force 60 soldiers on the bank of the canal "Meadow-(recognized-as-holy)-from-the great dagger" he left behind him. . . .

The boundary canal of Ningirsu, the boundary canal of Nina, the boundary line of Ningirsu, unto the bank of the Tigris above from the banks of Girsu, a great protecting structure of Ningirsu, he drained. The grain of Lagash, a storehouse of 3600 *gur* he took. [It was Ili whom Entemena had made patesi of Umma after the defeat of Urlumma who did the above, provoking further hostilities between Lagash and Umma.] Entemena . . . declared hostilities against Ili whom for a vassal he had set up. Ili . . . the dyked and irrigated field wickedly flooded; the boundary canal of Ningursu; the boundary canal of Nina he commanded to ruin. . . .

When the men of Umma the boundary canal of Ningirsu, the boundary canal of Nina, in order into their power the cultivated field to bring, shall cross, (whether men of Umma or men of (another) land) may Enlil destroy them. . . .[10]

Mackay has stated that even today infringements of agreements about the quantity of water to be drawn from the channels used in common are the cause of many feuds among the present-day tillers of the land. She has suggested, therefore, that it was just such a situation which brought on the hostilities between Lagash and Umma recounted above, since Umma was located upstream from Lagash and consequently was in a position to "drain" or otherwise interfere with the canals that watered the fields of both cities. Entemena, however, not satisfied with the temporary advantage which his victories gave him, proceeded to build another main canal—the Shatt-el-Hai—which drew its water from the Tigris River. This canal, built around 2500 B.C., is the only one of the ancient channels still in existence and use today.[11]

Not only were the canal-building activities of the rulers represented in the written records, but at least on one occasion the monotony of the formalized account was enlivened with illustrations—a symbolic representation of the origin of a canal. "In an inscription Ur-Nammu [ca. 2275 B.C.] enumerates the canals that he had dug to promote the fertility of his land, and in the top registers of the stela (Pl. 65, *a*) are the illustrations to the text; the king is shewn standing in the attitude of prayer and from above come flying angels with vases out of which flow the streams of life that only the god can give. . . ."[12] Truly then, "To repair canals or to dig new ones was the work upon which every ruler in Shinar prided himself beyond everything else. And wherever the water

[10] *Ibid.*, 57–61.

[11] Mackay, "Ancient River Beds and Dead Cities," 137.

[12] C. Leonard Woolley, *The Development of Sumerian Art* (London, 1935), 112, pl. 65a.

was brought in due measure, the fertility of the land was such that it seemed to strangers almost miraculous."[13]

And miraculous it was! As early as 2500 B.C., documents indicate that the average yield on a field of barley was eighty-six times the sowing, while a hundredfold return was not impossible.[14] Two thousand years later, Herodotus gazed in wonder at the well-kept fields of Mesopotamia and, probably contrasting in his mind the extreme fertility of the valley with the sparseness of his own native land, exclaimed:

> The Assyrians have but little rain; the lands, however, are fertilized and the fruits of the earth nourished by means of the river. This does not, like the Egyptian Nile, enrich the country by overflowing its banks, but is dispersed by manual labor or hydraulic engines. The Babylonian district, like Egypt, is intersected by a number of canals, the largest of which . . . is capable of receiving vessels of burden. Of all countries which have come within my observation this is far the most fruitful in corn. Fruit trees such as the vine, the olive and the fig, they do not even attempt to cultivate; but the soil is so particularly adapted for corn that it never produces less than two-hundred fold: in seasons which are remarkably favorable, it will sometimes rise to three-hundred. The ear of their wheat as well as barley is four digits in size. The immense height to which millet and sesamum will grow . . . I know not how to mention. . . . The palm is a very common plant in this country and generally fruitful; this they cultivate like fig trees and it produces them bread, wine, and honey.[15]

The exact methods of irrigating these early fields are unknown. As Herodotus noted, the Mesopotamians could not use the Egyptian method of inundation because of the nature of the Two Rivers and the extreme irregularity of the floodings. Mackay considered two types of irrigation possible from such rivers as the Tigris and the Euphrates: Perennial irrigation canals which are cut at such a level that water is obtainable at whatever height the river is and which entail the construction of barrages and regulators to regulate the flow; and inundation canals by which the flood waters could be poured on the lands from channels cut at a level to take flood water only.[16] It would seem from the statements of Entemena that the ruler of Umma both drained the canal and flooded the fields and that some regulatory devices were used in the early Mesopotamian irrigation projects. Continued production also necessitates perennial regulation of the water flow. Therefore it would seem that, already in early times, the irrigation methods of the Mesopotamians were of the first type suggested by Mackay.

Needless to say, the farming life of the Sumerians was not concerned only with the growing of grain and dates. Sheep and goats were probably kept, and there is artistic evidence from the early dynastic period to show the importance of cattle to the economy. Nin-Khursag was, among other things, a dairy goddess, for the small temple dedicated to her at Al-Ubaid has cattle as its main decorative motif. Of particular interest is the frieze of mother of pearl inlaid in bitumen which occupies the main position on the façade of the small temple. Here we have real genre art, a rural scene depicting the dairymen of the goddess milking her cows outside the reed hut that served as a barn. The cows were seemingly willing for they encircled the milkers lovingly with their tails. After the milk was obtained, it was strained into large jugs probably for storage or shipment.

There can be no doubt that the type of land use markedly affected the social and political institutions of the people of the valley. To what extent this effect manifested itself or, actually, what the nature of these institutions was, is not altogether clear despite recent attempts to analyze the social and political structure of the Sumerian city-state in the light of archaeological discoveries to date.

In discussing the effects of irrigation on the Greek city-state where, while it was practiced to some extent, irrigation was never so important nor of such value as it was to the inhabitants of more arid lands, Jardé wrote:

> Irrigation presupposes compulsory co-operation of all the inhabitants, a social organization with laws and regulations laying down the rights and duties of each. . . . The common use of a system of irrigation created necessary bonds between all who lived on a river. The Greek, . . . in his corner of land, was sufficient to him-

[13] Edwyn Bevan, *The Land of the Two Rivers* (London, 1917), 23.

[14] Childe, *What Happened in History*, 83.

[15] Herodotus, *History*, 1:193. Herodotus has often been accused of exaggeration in certain particulars. In view of the earlier recorders of productivity and of modern rates of reproduction, this observation about "two-hundred" and "three-hundred" fold may be one of such exaggerations.

[16] Mackay, "Ancient River Beds and Dead Cities," 136.

self and had no need of his neighbour. Such agricultural conditions could only maintain and develop individualism, which was one of the most marked features of Greek character, the one which seems to dominate the whole of Greek history.[17]

Although such cooperation undoubtedly prevailed among the inhabitants of Mesopotamia, features other than the mere use of a common system of irrigation entered into its presence. The very conception of the land itself made cooperation in the care of the land a necessity. It is not unlikely that such a spirit of necessary cooperation contributed much to the tradition of democracy, which in striking contrast to the despotism of later times, characterized the early governmental structure in Mesopotamia. A recent article calls attention to a source, contemporary with the kings of Akkad in the latter half of the third millenium, which indicates that the people in open assembly had it within their power to choose their king. The same article notes a still older tradition in Uruk which relates that Gilgamesh, the legendary hero of Early Mesopotamia, found it necessary to gain the approval of not only the elders of the town but the assembly of the citizenry as well before he could wage war against the neighboring city of Kish.[18] This cooperation, then, engendered by the practice of irrigation, can be said to have influenced not only the material phases of Mesopotamian life but also the social and political.

In the foregoing summary several indications of the nature of landownership and control have been noted. The stele of Ur-Nammu illustrates quite vividly the idea that the irrigation canals and, particularly, their effect on the productivity of the land were god-given and god-inspired. This same stele, as well as all the others, indicates too that the ruler was merely carrying out the wishes of the gods in constructing his canals. The cone of Entemena tells us that it was also the gods who delimited the lands between cities and required the boundary canals to be built. The same stele by its reference to "The grain of Nina, the grain of Nirgirsu, one storehouse full" and later "The grain of Lagash, a storehouse of 3600 *gur*" seems to differentiate between the grain (or fields) of the gods and that of the local city-state.

If we add to these, the further economic and political inferences that the law rests on individual rights and that the reason for the hundreds of thousands of legal documents recovered is the necessity for proof of ownership,[19] and further that "respect for private property is . . . epitomized in the fundamental tenet of the Code of Hammurabi that a purchase not accompanied by a written document is a theft punishable by death . . .,"[20] we must come to the realization that even in the earliest days of Sumer the city-state represented a highly complex socio-political organization based on a seemingly well-integrated mixture of both religious and secular concepts of land and property.

The whole structure is firmly founded on the great value and importance of the land and, perhaps more important, the continued productivity of that land. The particular emphasis on land as property and the necessity for continued productivity may explain the ruler's secular interest in the maintenance of the canals, both as means of irrigation and land delimitation, an interest which was always and inevitably linked to his religious duties in this respect.

However, in the earlier times, the religious aspect in the conceptions of both government and land, seems to have been dominant over the purely secular. It is evident that to early horticulturists the divinity who supposedly governed the fertility of the fields should have been an important one.

The divine trinity of the earliest times in Mesopotamia consisted of Heaven, Earth, and Sea. Soon, however, as the products of the earth assumed greater importance under the horticultural way of life, a fourth was added who, as the son and lover of Mother Earth, became the incarnation of the grain, vegetation, and the beneficent waters. While the goddess of the earth apparently represented the productive powers of the earth, Tammuz, her son, represented what was produced.[21] Tammuz, in seals of the Sargonid period (after 2500 B.C.) is shown producing grain, not only around him but on his robe and from his hands,

[17] A. Jardé, *The Formation of the Greek People* (New York, 1926), 42.

[18] Thorkild Jacobsen, "Primitive Democracy in Ancient Mesopotamia," *Journal of Near Eastern Studies*, 2:159–172 (1943).

[19] Speiser, "Some Sources of Intellectual and Social Progress in the Ancient Near East."

[20] Speiser, "The Beginnings of Civilization in Mesopotamia," 27.

[21] S. Langdon, *Tammuz and Ishtar* (Oxford, 1914), 4–5.

head, and shoulders.[22] Since the fertility of the soil depended on irrigation, Tammuz represented also the beneficent waters of the two rivers and, as a consequence, he belonged to the cult of Eridu, center of the worship of Ea, lord of the waters[23] and wisdom. Ea was not represented as a rain god, as a similar divinity was portrayed among the American Indians, but he was customarily represented as seated in his chamber in the middle of the nether sea with streams of water and fishes flowing from him, an attempt, perhaps, to indicate the divine origin of both the rivers and the canals so necessary to the survival of the inhabitants of the valley. It is interesting to note, too, that Marduk, a later aspect of Tammuz who combined both the divinities of fertility and the sun, was always represented as subordinate to Ea, his father and lord of the waters so necessary for fertility and reproduction.[24]

Tammuz, the god of fertility and the fresh beneficent waters, son of Ea, the lord of all the waters, and both husband and son of Mother Earth, soon came to represent a most important deity in the pantheon of the ancient Mesopotamians. In him was vested all the aspects of the productivity of the fields. The following ancient psalm portrays vividly the effect on land and man when Tammuz, at his annual death, must leave his bride-mother, only to return again and with him bring back the productivity of the fields:

In Eanna, high and low, there is weeping,
Wailing for the house of the lord they raise.
The wailing is for the plants, the first lament is, "they grow not".
The wailing is for the barley; the ears grow not.
For the habitations and the flocks it is: they produce not.
For the perishing wedded ones, for perishing children it is: the dark-headed people create not.
The wailing is for the great river; it brings the flood no more.
The wailing is for the fields of men; the *gunū* grows no more.
The wailing is for the fish-ponds; the *dasuḫur* fish spawn not.
The wailing is for the cane-break; the fallen stalks grow not.
The wailing is for the forests; the tamarisks grow not.
The wailing is for the highlands; the *maš̆gam* trees grow not.
The wailing is for the garden store-house; honey and wine are produced not.
The wailing is for the meadows; the bounty of the garden, the *siḫlū* plants grow not.
The wailing is for the palace; life unto distant days is not.[25]

It is not, then, difficult to understand how these people whose existence depended upon the irrigated land and who could contrast the fertility of their artificially watered fields with the surrounding barrenness of the desert could consider the land as a divine bequest from patron gods and so invest it and its fertility with divinity.[26]

Childe has given an interesting picture of the religious organization of what he called the early Sumerian theocracy in which the organized priesthood "formed corporations as eternal as the gods they served and maintained" as representatives on earth of the gods and the caretakers of the divine lands. Further, he stated:

> The spiritual and economic unity of the new aggregate was expressed most obviously in the temples of the gods, raised on an artificial platform and dominated by the towering ziggurat, but comprising also granaries, magazines and workshops. The gods, as representatives of the tribe and clans, own the farm land created by social labor; town land is apparently individually owned already, while pasture remains common. The tribal territory of Lagash, for example, appears divided into the estates of some twenty deities, eminent domain over them all being perhaps retained by the chief god of the city or tribe. His consort, Baü . . ., thus owned seventeen square miles. As with the arable land of a barbarian clan, the use of three-quarters of this area was allotted to individual families in plots of varying size. The rest Baü retained as "a personal estate," worked for her by wage earners, by tenants paying the equivalent of a seventh or an eighth of the produce as rent, or by the customary labor of the remaining clansmen.[27]

In Mesopotamia, then, at least five thousand years ago, there was a complex social organization based, probably more than in any other land since,

[22] Henri Frankfort, *Cylinder Seals* (London, 1939), 114.

[23] Langdon, *Tammuz and Ishtar*, 5–6.

[24] Frankfort, *Cylinder Seals*, 102–103.

[25] Langdon, *Tammuz and Ishtar*, 11.

[26] According to Bevan, *The Land of the Two Rivers*, 24, "It has been calculated that the maximum area which was cultivated in antiquity was between 20,000 and 30,000 square kilometres. . . ."

[27] Childe, *What Happened in History*, 87.

on the sanctity of the land. As the society evolved, the sanctity of the land itself was transferred in part to the right of private ownership, a right which, as has been pointed out,[28] later rulers, intent on the acquisition of power, were never able to abrogate successfully. Always the conception of the divinity of the land imposed certain duties and restrictions upon the ruler. Never was there the institution of the divine right of kings and never was the deification of the ruler—a direct attempt to transfer ownership by the gods to ownership by the king—a success. The threat, possibly made clear in times of crisis by the priesthood, of the revocation of divine patronship over the land, with the consequent destruction of its productivity, seems always to have been strong enough to prevent such a move.

With the intrusion into the valley of different ethnic groups, each with a different culture, through the centuries, the conception of the divine planning of the fields gradually disintegrated and with this disintegration, the fertility of the lower valley gradually decreased with a consequent transference of temporal power and population to the north in the area between Babylon and Nineveh. It remained for Hulagu and his Mongol hordes from the East to administer the *coup de grâce* to the whole area. "At the close of the twelfth century A. D.," as one writer has noted, "the country was still the same paradise of grain and vegetation known to Hammurabai and Herodotus .... the waters of its two great rivers flowed with controlled regularity into a million irrigation channels. Three centuries later it was reduced to a shabby and impoverished outpost of the new Ottoman Empire."[29]

Hulagu destroyed Baghdad in 1258 A.D. and brought an age to an end. But " ' Most ruinous of Hulagu's acts had been the studied destruction of the dykes and headworks, whose ancient and perfect system had been the sole source of wealth. Disordered times, and the very fewness of the spiritless survivors, forbade repair; and the silting and scouring of the rivers once let loose, soon made the restoration of control the remote, perhaps hopeless problem today still unsolved.' "[30] After the destruction of Baghdad, there was "a slow process of deterioration for lack of proper upkeep and administration. There was no longer, for instance, anything to prevent a peasant from making a breach in the bank of a high-level canal, and drawing off the water to work his mill, or from allowing the breach to enlarge itself beycnd the limit of safety. Moreover, the rivers themselves were gradua'ly cutting deeper into the alluvium, and the increased size of the barrages required to divert the water into canals was beyond the means of any but a central organization of efficient engineers. But above all there was no security, and 'few would sow where another might reap. . . .' "[31]

From the destruction by Hulagu to the present, the land between the Two Rivers has been dead—perhaps only dormant, awaiting some divine inspiration to rouse it once more. The observable evidences of history point the way, for even centuries of neglect have not been able to erase past glories. ". . . the other great artificial waterways of Babylonian times . . . like their smaller tributaries, can now only be traced as a double row of mounds with a slightly raised or sunken area between. Their great width is still impressive and when crossing them in a car it seems as though minutes elapse between leaving one 'bank' and arriving at the other."[32]

Perhaps in another era of enlightenment, another era of love and respect for the land as something alive, these great artificial waterways will once more grace the land with their beauty and their life-giving properties.

[28] Speiser, "Some Sources of Intellectual and Social Progress in the Ancient Near East."

[29] Lloyd, *Twin Rivers*, 175–176.

[30] *Ibid.*, 176, quoting S. H. Longrigg, *Four Centuries of Modern Iraq* (Oxford, 1925).

[31] *Ibid.*, 176.

[32] Seton Lloyd, *Mesopotamia* (London, 1936), 7–8.

NOTES ON THE HISTORY OF THE WORD *FRONTIER*

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The frontier as an American phenomenon has engaged the attention of scientific historians for about fifty years. As a term, however, *frontier* has received but little attention from scholars. Historians have accepted the word and have used it without giving much in the way of critical historical examination to the term that stands for the thing. Yet the term has a history, independent of the thing, and a history well worth the knowing.

On the assumption that a knowledge of the history of the word could cast light upon the phenomenon of the frontier, the investigation here summarized was undertaken. In the course of the study a large number of dictionaries and similar works was consulted.[1] From these, key excerpts are given below.

The English emigrants brought the word to the Atlantic seaboard in the opening years of the seventeenth century. Moving with the Anglo-Americans and their American descendants, the word afterward crossed the Alleghenies, occupied the plains of the Mississippi Valley, and eventually reached the Pacific coast. Thus it has been in continuous use in English-speaking America for more than three centuries. In the face of altered circumstances to which the word was applied, after being brought from England, it naturally took on new shades of meaning and came to form novel compounds, so that it has had an extensive and specifically Anglo-American history.

On the etymology of the word, a few preliminary remarks may be offered. The classical Latin word, *frons, frontis*, is a feminine noun with the meaning, forehead, brow, front. By extension of the root meaning, the word came to denote the fore part of anything, the front, the façade, the van.[2] In Late Latin occur the words *fronteria* and *frontaria*, meaning borderland or frontier. In Old French the word became *frontiere*, the frontier, marches, or border of a country. From France the word traveled into England. Caxton and Shakespeare both employed it in the sense of a part of a country bordering on another.[3] In modern French the word maintains its currency. The authoritative French definition is: "Les limites d'un état, d'une contrée en tant qu'elles le séparent d'un autre état, d'une autre contrée. . . ."[4] Such other Romance languages as Provençal, Italian, Spanish, and Portuguese also include the word, and in the several dictionaries of these languages definitions are readily available. Readers who may interest themselves further in the etymology of the word are certain to find help in the account by Sir James A. H. Murray in his work, *A New English Dictionary on Historical Principles* (Oxford, 1897). In addition it may be noted that the other references referred to below often supply etymological details.

The earliest English dictionary, Robert Cawdry's *A Table Alphabetical*, published at London in 1604, does not list the word.

In 1623 Henry Cockeram published in London *The English Dictionarie: or, An Interpreter of Hard Words*. Cockeram ranks as the first English lexicographer, and his is the first work which uses the term *dictionary* in the modern sense. He listed *frontiere* and definied it as "the bounds or limits of a country."

The first edition of the work by Nathan Bailey, *An Universal Etymological English Dictionary*, was published in London in 1721. He gave a slightly expanded entry for the word: "Frontiers [*frontieres*, F. of *frons* the Forehead, L.] the Limits or Borders of a Country or Province." In 1730 Bailey published in London his *Dictionarium Britannicum: or, A More Compleat Universal*

[1] This survey could not have been completed without the generous assistance, expended over many hours, of Mrs. Helen M. Porterfield, who assembled the references, transcribed much of the evidence, and corresponded with librarians in various parts of the country. The writer acknowledges his heavy obligation to Mrs. Porterfield for her help with hearty thanks.

[2] Ethan Allen Andrews, *New Latin Dictionary* (New York, 1907), 783.

[3] Walter William Skeat, *An Etymological Dictionary of the English Language* (new ed., rev. and enlarged, Oxford, 1910), 227.

[4] Académie Française, Paris, *Dictionnaire* (éd. 8, Paris, 1932), 1:576.

Etymological English Dictionary than Any Extant. Frontier was newly defined in this work as "the border, confine or boundary of a kingdom or province, which the enemies find in the *front* when they are about to enter the same."

That lexicographer supreme, Dr. Samuel Johnson, avoided the danger of earning any future reproaches by choosing to include the word in his great work, *A Dictionary of the English Language*, published at London in 1755. Johnson offered the most extensive account of the word that had thus far appeared in print in English. His account specified that the word, which was to be accented on its first syllable, was derived from the French, *frontiere*. This is his definition: "The marches; the limit; the utmost verge of any territory; the border: properly that which terminates not at the sea, but fronts another country." His first example of the usage of the word was taken from Edmund Spenser's *View of the State of Ireland*: "Draw all the inhabitants of those borders away, or plant garrisons upon all those frontiers about him." Milton's *Paradise Lost* supplied him with his second illustration: "I upon my frontiers here keep residence, That little which is left so to defend."

John Walker published *A Critical Pronouncing Dictionary and Expositor of the English Language* at London in 1791. His entry is: "Frontier, front'yeer.... The marches, the limit, the utmost verge of any territory."

After the American Revolution opened, the rising spirit of American patriotism generated an interest in Americanisms, in specifically American geographies, and in histories, spellers, and dictionaries. Interest in American speech usages emerged clearly. President John Witherspoon of Princeton College, a Scot who had quickly made himself at home in the new nation (he emigrated from Paisley in 1768), contributed some remarks on the word *frontier* to a periodical published at Philadelphia in June 1781 as follows: "As you appear to be sensible of the importance of a strict attention to grammatical propriety in speaking and writing, I am confident you will have no objections against being informed of any inaccuracies which may have escaped from your own pen: I shall, therefore, take the liberty of pointing out a few.... 'This (bringing the 'Indian tribes upon the back settlements') I call an act of extreme and unjustifiable barbarity, because their manner of making war is well known.' Is not an *improper reason* assigned here? It is *their manner of making war*, and not its *being well known*, in which the barbarity of bringing them upon the settlements consists. The settlements in America were begun to be made near the ocean, and were gradually advanced into the country; for this reason I would prefer *frontier* to *back settlements*: nevertheless the settlements may be either the one or the other according to circumstances:—the following example will explain my meaning. A gentleman in London asked a printseller's clerk if Mr. Sayer was at home? the clerk replied 'yes, Sir, he is backwards'—'*backwards*, Sir, (said the gentleman) which way is that?' '*Straight forwards*, Sir, replied the clerk.' This was literally true, for Mr. Sayer was then in the *back* part of the house, towards which the gentleman's *face* was turned. In like manner the settlements may be spoken of as being either *back* or *frontier*, according to circumstances; nevertheless, I would prefer the latter appellation, in the case before us, for the reason which I have assigned above."[5]

In 1798 Samuel Johnson, Jr., a Connecticut writer, brought out the first American dictionary, *A School Dictionary, Being a Compendium of the Latest and Most Improved Dictionaries*. This work, published at New Haven, does not list the word *frontier*. In 1800 Johnson and John Elliott joined forces to compile *A Selected, Pronouncing and Accented Dictionary: Comprising a Selection of the Choicest Words Found in the Best English Authors*. In this work *frontier* is definied as "limits, bounds."

Noah Webster published in 1806 the first lexicon in the long series of such works associated with his name. *A Compendious Dictionary of the English Language*, issued at Hartford and New Haven, Connecticut, followed the lead of Johnson and Elliott and of the English dictionary makers and listed the word, defining it as "a limit, boundary, border on another country, furthest settlements." The use here of the phrase, "furthest settlements," is interesting, because, though but in a dim way, it suggests the "western" quality of the frontier.

Webster's celebrated lexicographical work, *An American Dictionary of the English Language*, was issued at New York in 1828. It defines

[5] "Quercus: To the Druid," in the *Pennsylvania Journal and Weekly Advertiser* (Philadelphia), June 30, 1781. "Quercus" was commenting upon remarks by The Druid, No. 5, in *ibid.*, May 9, 1781.

frontier as "The marches; the border, confine, or extreme part of a country, bordering on another country; that is, the part furthest advanced, or the part that fronts an enemy, or which an invading enemy meets in front, or which fronts another country." His telling expression of 1806, "furthest settlements," had been dropped. Webster gave the French, Italian, and Spanish forms of *frontier*, listed one familiar form of the adjective, *frontier*, and one rare form, *frontiered*. Webster's definition of *frontier* as given in 1828 was carried through subsequent editions with minor variations of phrasing but none of meaning. Hence no notice will be taken of his compilations published in 1840, 1847, 1859, 1864, 1879, and 1884. The edition of 1890 and subsequent editions, however, call for comment later.

In 1816 John Pickering published the first book of Americanisms. Its title was *A Vocabulary; or, Collection of Words and Phrases, Which Have Been Supposed to Be Peculiar to the United States of America;* and its place of publication, Boston. Pickering included neither *border* nor *frontier* in his list.

Joseph E. Worcester published at Boston in 1830 *A Comprehensive Pronouncing and Explanatory Dictionary of the English Language, with Pronouncing Vocabularies of Classical and Scripture Proper Names.* This work was substantially an American edition of Dr. Johnson's English publication. Worcester's definition of *frontier* was "the utmost verge of any territory; a border." The definition that Worcester gave in his *A Universal and Critical Dictionary of the English Language*, Boston, 1846, was virtually that which he had given in 1830.

In 1860 Worcester published two dictionaries. The first was *A Comprehensive Dictionary of the English Language* in which he defined *frontier* as "the utmost verge of any territory; a border; confine." In *A Dictionary of the English Language* he offered another definition: "the boundary of a state, or the territories adjacent to the boundary; confine; border; marches." His illustration of the use of the word taught the doctrine that "the best *frontier* is the sea . . . ." An edition of Worcester's *Comprehensive Dictionary*, published in 1907, added nothing that calls for comment.

Charles Richardson published at London in 1835–37 his *New Dictionary of the English Language.* This separate work was originally issued in parts (1818–1837) as portions of volumes 14–25 of *Encyclopaedia Metropolitana.* He listed *front, frontier*, and *frontiered* and gave several examples of the use of the word. From Jean Froissart he took this: "He feared more the Flemynges than any other; and sent the Lord of Beauiewe to Mortayn, to keepe the fronters agaynst Heynalt. . . ."

John Russell Bartlett published his *Dictionary of Americanisms: A Glossary of Words and Phrases Usually Regarded as Peculiar to the United States* at New York in 1848. He listed neither *border* nor *frontier*. Another edition published at Boston in 1877 likewise omitted to list *frontier*.

Alfred Langdon Elwyn's *Glossary of Supposed Americanisms* (Philadelphia, 1859) does not include the word *frontier*.

Maximilian Schele De Vere's *Americanisms; The English of the New World* was published at New York in 1872. It lists *border ruffians* but not *frontier*.

John S. Farmer, an Englishman, published *Americanisms—Old & New* at London in 1889. He, too, failed to list *frontier* but found a place for *border ruffians*.

The Century Dictionary, an Encyclopedic Lexicon of the English Language, published at New York in six volumes between 1889 and 1891, provided an excellent account of the word *frontier*. Five definitions of the noun form are enumerated. It is initially defined as "That part of a country which fronts or faces another country; the confines or extreme part of a country bordering on another country; the marches; the border." For illustrations sentences from Shakespeare's *Hamlet*, E. A. Freeman's *American Lectures*, and J. R. Green's *Conquest of England* are used. The second definition provides the American usage thus: "That part of a country which forms the border of its settled or inhabited regions: as (before the settlement of the Pacific coast), the western *frontier* of the United States." For this definition an example, rather literary and rather late in point of time, from W. M. Baker's *New Timothy*, is quoted: "His nephew, after a night of sleepless thinking, had announced to his uncle his intention of mounting his horse and riding out in search of a field of labor farther out upon the *frontier*." The adjectival definition reads: "Of or pertaining to a frontier; lying on the border or extreme part; bordering: as, a *frontier* town." As an intransitive verb the word is defined thus: "To form or constitute a frontier; possess territories bordering on or

constituting a frontier: with *on* or *upon*." The explanation of the transitive form reads: "To place on the frontier; border." To these definitions the following concerning *frontiersman* may be added: "One who settles on the frontier or borders of a country, or beyond the limits of a settled or civilized region." These definitions, it should be noted, have been repeated in all subsequent editions.

Charles Ledyard Norton's *Political Americanisms: A Glossary of Terms* was published in New York and London in 1890, with a preface dated New York, November, 1890. In this alphabetically arranged work the entries run from *Abolition* to *Young Hickory*, but *frontier* is not among them.

This same year of 1890 *Webster's International Dictionary of the English Language* was issued with listings of the noun, two adjectives, and the noun *frontiersman*. As Webster now defined *frontier*, it was "That part of a country which fronts or faces another country or an unsettled region; the marches; the border, confine, or extreme part of a country, bordering on another country; the border of the settled or civilized part of a country; as, the *frontier* of civilization." Some of the phrases of this rather sprawling definition reflect at least a peripheral consciousness on the part of the compilers of the existence of a thin sparse line of settlements in the rough West. We glimpse this, rather faintly, in the phrase, "the border of the settled or civilized part of a country." The compilers had described something which they spoke of as "the *frontier* of civilization." Had they but given an example or two from American conditions, they could have made plain whether they were as familiar with the phenomenon of the frontier as they were with *frontier* as a word.

Webster's New International Dictionary of the English Language, published at Springfield, Massachusetts, in 1909, listed the following definitions of the word as a noun: "1. That part of a country which fronts or faces another country; the marches; the border; as, the German *frontier* of France; Franco-German *frontier*. 2. The border or advance region of settlement and civilization; as, the Alaskan *frontier*. *Chiefly U. S.* 3. A border or advance region of thought, sentiment, etc., considered as resembling a geographical or political frontier; as, working on the *frontiers* of science; also, any line of division between opposites; the boundary. 'Near to the frontier of *treason*.' *Macaulay*." These definitions, it should be noted, are repeated in the second or 1934 edition of this work.

A Standard Dictionary of the English Language was published by Funk and Wagnalls Company in 1893. This work was relatively liberal in its treatment of the word, for it listed *frontier* as verb, adjective, and noun and included the nouns *frontierman* and *frontiersman*. *Frontier*, as a noun, this dictionary treated as a word with two separate, though related, meanings, and explicitly to indicate this duality, the compilers numbered their definitions. The first definition they gave was "The part of a nation's territory that abuts upon another country; the border; confines." The second meaning was defined as "That portion of a country between a civilized and an unsettled region; the confines of civilization." The compilers' device of here separating the root meaning from the secondary meaning resulted in a distinct gain, logically speaking, which is readily apparent when the *Standard Dictionary*'s pair of definitions is compared with the single sprawling definition in the 1890 edition of *Webster's International Dictionary*, cited above.

The word *frontier* was considered at length by Sir James A. H. Murray in *A New English Dictionary on Historical Principles* (Oxford, 1897). Murray's work recognized an American as well as an English meaning of the word. For the latter he gave this definition: "The part of a country which fronts or faces another country; the marches; the border or extremity conterminous with that of another." And for the former: " 'That part of a country which forms the border of its settled or inhabited regions: as (before the settlement of the Pacific coast), the western frontier of the United States.' " For this specific usage Murray gave the *Century Dictionary* as his authority, and cited an example: "1870 Emerson *Soc. & Solit., Civiliz.* wks. (Bohm) III. 8 'Tis wonderful how soon a piano gets into a log-hut on the frontier." Murray's was the most extensive and most fundamental account of the word thus far contributed by any lexicographer. He gave obsolete and current spellings, etymologies, and cognate forms in other languages, and a comprehensive survey of the word's meaning, current and obsolete.

Sylva Clapin in 1902 published *A New Dictionary of Americanisms; Being a Glossary of Words Sup-*

posed to be Peculiar to the United States and Canada in New York. She did not list the word.

Richard H. Thornton published *An American Glossary*, 2 volumes (London, 1912) and volume 3 (Madison, 1939). He did not list the word.

None of the four editions (New York, 1919, 1921, 1923, 1937) of H. L. Mencken's *The American Language* includes any consideration of the meaning of the word *frontier*. In the second, third, and fourth editions, it is mentioned in the discussion of the variations between English and American practice in accenting syllables of the same words. Referring to *frontier* and *harass*, Mencken points out that "The English accent the first syllables; we commonly accent the second." In *The American Language . . . Supplement I* (New York, 1945), Mencken discusses words which occur in both American and English but in quite different senses. To an Englishman, he points out, "a *frontier* is always a boundary between two countries. . . ." In this work also he includes discussion (pages 227, 228, 234, 235, 542) of the influence of the frontier process on the American language.

C. K. Ogden, in *The Basic Dictionary* (London, 1932), listed and defined *frontier* as "Limits (of country)."

In 1935 H. W. Horwill sought to clarify the word for British readers in *A Dictionary of Modern American Usage*. In his article on *frontier*, Horwill brought out the essentials. He quoted a sentence concerning the frontier line as it was in 1860 from a current work by an American historian. Horwill's comment on his chosen sentence may be offered: "This passage is likely to bewilder any Eng. reader who is not aware of the peculiar Am. meaning of *frontier*," because, as he explains, the word is used in the United States to denote "the limit of settlement within the U. S., as defined by a certain density of population." From his context it is clear that Horwill knew of Frederick Jackson Turner's writings. Horwill neglected to state, however, that the definition of the word in terms of density of population per square mile was a definition originated by the census officials of the United States in 1874 and that subsequently historians and geographers took over this special definition and used it for their own purposes. It is clear from the evidence cited in the present article that no American dictionary thus far discussed has defined the term in relation to density of population. However, a discussion of the origin of the term *frontier* in relation to American population densities is available elsewhere.[6]

The second volume of Sir William A. Craigie's *A Dictionary of American English on Historical Principles* was published at Chicago in 1940. By this year the word *frontier* had come to have a popularity that entitled it to a full discussion. Even in his prefatory note to this volume Craigie referred to it as a "distinctive or noteworthy" term. Of the distinctively American usages of *frontier* as a noun, Craigie enumerated three. He defined the primary meaning of the term thus: "A region in what is now the United States newly or sparsely settled and immediately adjoining the wilderness or unoccupied territory." He cited illustrations which range in time from 1700 to 1918 but did not make any reference to Frederick Jackson Turner's definition, or use of the term, in his oft-cited essay of 1893. Craigie also made rather a clear sweep of its compounds: *frontier country*, *frontierism*, *frontier post*, *frontier settlement*, *frontiersman*, etc.

Craigie's article will stand for long as a rich repository of examples of the term, as used by Americans. Full as it is, however, it can be amplified at least three times. An example to be chosen from Frederick Jackson Turner's use of the word in his essay of 1893 should be included; an example of Francis A. Walker's use of the word, chosen from his *Statistical Atlas of the United States* (New York, 1874), should be added; and some examples, drawn from American seventeenth-century records, earlier than those cited by Craigie, should be incorporated. It would not be difficult to fill the third prescription; one has but to consult the Virginia statutes to find instances of the desired kind. Horwill, meantime, holds a card Sir William could have played to advantage.

Frederick Jackson Turner's essay of 1893 has probably had some influence in increasing the currency of the word among writers of books during the last half century. Between 1894 and 1920, a period of twenty-seven years, the term was used as an element in the titles of 59 books. In 1920 Turner published his volume of essays, *The Frontier in American History*, which carried his ideas and interpretations to the broader and more general public of readers. Thereafter the word frontier enjoyed

[6] Fulmer Mood, "The Concept of the Frontier, 1871–1898: Comments on a Select List of Source Documents," *Agricultural History*, 19:24–30 (January 1945).

an enhanced popularity. Between 1921 and 1942, the word was used 157 times in titles, thus: 1921–1929, 45 titles; 1930–1942, 112 titles.

Thus, decade by decade, this derivative from the Latin goes marching onward from frontier to frontier!

THE DAWN OF HIGH FARMING IN ENGLAND

Land Reclamation in Early Victorian Days

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Drainage. Two hundred years ago the wheat crop of England was mainly grown on the heavy wheat and bean land. The extension of the arable acreage then depended on bringing the lighter soils into condition for growing wheat in place of the rye which was characteristic if such soils were cultivated at all. This was done very successfully by using the turnip and so-called artificial grasses, perhaps with a heavy preliminary dressing of marl dug out of the subsoil, in what became famous as the Norfolk four-course rotation. By the date of Waterloo this had been so successful that in the post-war depression the longer-cultivated heavy soils, with their high ridge and furrow system of culture, suffered most, and it was only possible to redeem the position of the farmers who occupied such lands if they could be made to yield more heavily at less cost.

The greatest obstacle to this desirable end was the wetness of such soil. Both surface water and underground moisture were contained in it far too long for the health of plants, and moreover this wetness destroyed a good part of the value of the manures laid upon it. The first thing necessary to improve it was therefore a satisfactory system of field drainage, and this was really nonexistent in general practice, although brush and stone filled drains were used in the water furrows in some districts, and the mole plow had already been invented and used in Essex.

It was a Scotchman, however, who became the protagonist of draining by "hollow" drains. He called it "thorough" draining. Like many another who has introduced valuable innovations in land improvement, he was really an amateur at farming, his primary means of livelihood being a cotton mill. He was James Smith of Deanston (1789–1850), who became manager of his uncle's mill at the age of eighteen, having at a juvenile age shown signs of remarkable precocity. At six years of age he is said to have made a model of a cotton mill complete with a water wheel.

Even as a child Smith was absorbed in farming, and his interest never flagged during his lifetime, although it was put aside from time to time. Whether the hours he spent "walking beside the plough, or sitting on the crossbar of the stilts talking to the ploughman, observing with delight the movement of the horses and the turning of the furrow" were equally as early as his building of the model mill or not, they laid a firm foundation to his interest in the subject, and his collateral interest in engineering was a further natural advantage.

Many minds of a similar color had been turned towards the problem of mechanized reaping, but no real success had been obtained. The harvest was still a matter of the employment of all available hands both permanent and casual. Large gangs of migratory laborers indeed traversed the country in several directions seeking remunerative piecework on this job. Smith's reaping machine, however, had bad luck, although he cut some part of a harvest in 1811. At formal trials of the machine in 1812 and 1813, unfortunate accidents, largely the result of the unevenness of the ground, caused breakdowns which could not be repaired on the spot so that his machine did not secure the awards he had hoped for. He did, however, manufacture a dozen or so which worked well on "a crop which is not much laid, and when the surface of the ground is moderately smooth and uniform." His own crop was cut with one of these machines for many successive years at the moderate cost of 5 shillings per acre, and he was given consolation prizes by one or two farming societies for the invention.

No doubt drainage had always interested Smith

as being one of the preessentials to profitable farming on heavy land, but the misfortune which happened to his reaping machine must have emphasized to him the necessity for laying the land flat before it could be worked by machines; so when in 1823 he took over Deanston Farm of 189 acres he reintroduced and perfected the parallel drain system of Palladius and still further augmented the fertility of the heavy lands.

The farm was quite unpromising when Smith took it on. A thin soil, studded with boulders, over a strong subsoil, wet and flourishing with aquatic plants except where it was dry enough to grow heath, fern, and broom, only an enthusiast for improvement could have looked easily upon.

The drainage system put in was complex but effective. The main drains were 4 feet deep, the receiving drains 3 feet deep, and the parallel field drains 2 feet 6 inches at distances varying between 16 and 21 feet apart. They were dug in the shape of a V and filled up to 18 inches from the surface with broken boulder stones, collected on the farm itself. Deep plowing followed but was found unsuccessful because it mixed the subsoil with the surface soil. So Smith invented his subsoil plow which broke subsoil without bringing it to the surface. At the same time the whole of each field was laid flat, and an ingenious system of supplying the water from the drains for livestock was installed. In Lord Ernle's picturesque phrase, "By his system of drainage and deep ploughing he converted a rush-grown marsh into a garden."

Naturally enough Smith's neighbors, observing the success of his system, imitated him and got the same results. Soon, in terms of time in farming, that is eight years after he entered Deanston Farm, he felt obliged to publish a description of his methods, and in 1831 his first paper, *Remarks on Thorough Draining and Deep Ploughing*, was published. Even before this time, news of his improvements had caused enterprising farmers and landowners to visit Deanston to see for themselves. They did not leave without tasting Smith's hospitality and, of course, seeing the cotton works which were run on the most approved and philanthropic lines.

In 1836 the farm depression was beginning to lift, but it was still serious and the complaints were so loud that the Government of the day appointed one more Select Committee on Agricultural Distress. Smith, who was in London, perhaps on other business, was called upon to give evidence and could only recommend his own system of land improvement as one means of alleviating distress. It would enable turnips to be grown where none could be grown before. Turnips would enable more stock to be kept, as would the grasses, if a four or five course rotation were adopted, the resulting increase in animal manure would help the land which would moreover be dry enough to be treated with the new manures, guano, nitrate of soda, and dissolved bones, without fear of their being wasted in the wet. C. Shaw Lefevre was greatly impressed and spread Smith's fame by reporting that his system "was the only thing likely to promote the general improvement of agriculture and to aid the farmers in overcoming their difficulties." This may be the claim of an enthusiast, but the subject was becoming increasingly important, and when the first volume of the *Journal* of the Royal Agricultural Society of England was published it was dealt with in three contributions and repeatedly in the succeeding volumes.

Just before Smith's pamphlet appeared in 1831, Josiah Parkes (1793–1871) returned from France and began his career as an agricultural engineer interested in drainage on a somewhat larger scale aimed at the reclamation of bogs. In 1833 he was working on the drainage of Chat Moss. Here his work led him to the conclusion that deep drainage was more successful than the rather shallow system of field drains employed by Smith and his disciples. He preached the 4-foot and the 5-foot drain.

These two partisans and their followers proceeded to engage in a lengthy controversy which lasted throughout the nineteenth-century era of active draining operations. Smith thought much money and labor had been lost in deep drains; Parkes had the same opinion about shallow drains. The work of both was well known, and both had many imitators, some successful and some whose efforts failed. The matter for a pretty argument in a prescientific age was readily assembled by either party.

With the invention of the cylindrical drain pipe by John Reade in 1843 and Thomas Scragg's efficient pipe-making machine a year or so later, the possibility of the effective draining of heavy land, even where stone was not conveniently to hand, was increased, and the draining age descended upon the landowner, the tenant, and the laborer. Government money was made available.

Millions were spent and thousands of acres drained. A great deal of this work was successful, but the influence of Parkes was responsible for many miles of pipes being put too deep to do their work, and thousands of pounds were sunk in drains that never carried a drop of water away from the land. Some of these pipes were discovered in the new era of field drainage which developed as a result of World War II.

The benefit of the work done on the heavy clays, where it was successful in laying the land dry, was incalculable. Improved rotations became possible, heavier yields were obtained, because the newly invented manures could be used without waste, more livestock could be carried on the land, and this in turn added to its fertility. The thorough draining, subsoil plowing, and even some of the deep drains all helped to do the essential preliminary work, which made possible the years of high farming and prosperity which lasted until the disasters of the 1870s almost overwhelmed English farmers.

The Northumbrian Five-Course System. Under conditions of border warfare a man has to be wide awake to retain possession of his life and chattels, and the alert mindedness created by these conditions was, it is claimed by patriotic Northumbrians, transferred to a receptivity to new ideas in peaceful occupations when the Border settled down. In the early years of the eighteenth century the Border lands were wild and lonely enough, and when new settlers came to it about 1770 there were few established customs and long inbred prejudices to be overcome by men who wished to farm as they pleased—not as their neighbors dictated. What was perhaps even more important to the introduction of a system, including a two or three year ley, was the alternate husbandry common to the district where the land was farmed at all.

The Culleys moved from the Tees to Glendale in 1767 and the Greys to Millfield Hill about the same time. Though he showed respect to the Culleys it was to John Grey of Dilston (1785–1869), the second of his line, that Lord Ernle paid a spectacular but vague tribute. "When his father first settled in Glendale, the plain was a forest of wild broom. He took his axe, and, like a backwoodsman, cleared a space on which to begin his farming operations. The country was then wholly unenclosed, without roads or signposts. Cattle were lost for days in the broom forests. The inhabitants were as wild as their home . . . ferocious . . . uneducated. . . . Men of the same stamp as Grey, or the Culleys, settled in the fertile vales, and by their spirited farming transformed into cultivated land wide districts, like the rich valley of the Till, which before the period of [Napoleonic] war prices were wildernesses of underwood."

This is the district of the estates of the Earl of Derwentwater, which, sequestered after 1715, became the Greenwich Hospital Estates, of which Grey himself became later the official receiver. Arthur Young traversed this countryside on his Northern Tour in 1769. Not all the land was the wild waste described by Ernle although rentals were only about 9 shillings between Berwick and Wooler, and farms ranged between 450 and 2,250 acres. Crop yields were reasonable for that day: wheat, 24 bushels; barley, 28 bushels; oats, 32 to 48 bushels; beans and peas mixed, about 25 bushels; and clover, which was sown with the barley, yielded about 2 tons to the acre. Large short-horned cattle were kept, giving about 4 gallons a day and rising to 150 stone weight when fat. Flocks of sheep from 500 to 10,000 were kept. Very large numbers of ewes were milked, and butter and cheese were made, the former only being used for salving the sheep. Twenty horses and 16 oxen supplied the draught on 500 acres arable, and two of each were used on a plow.

It is evident that there was a basis of good husbandry in Northumberland although Grey himself writing in 1841 said that farming was in a very rough way when he first learned it at Millfield Hill. It was the alternate husbandry which Young described as used on the moors, but he made it sound a bit better than Grey. The land was broken in October and left for a year, when it was plowed, summer fallowed, limed, and sown with turnips, then oats with ray grass left down for seven years. Then it was broken up again, and two crops each of turnips and oats taken and laid down again. Only dry lands were dealt with in this way; the wet were not thought worth troubling about.

By 1797 this alternate husbandry course had become oats, turnips, barley, and clover and other grasses for three years, and the turnips were grown on raised drills with manure, well prepared and applied immediately below the plant, a system said to have been brought from Roxburgh in 1757 by one Pringle, but only slowly becoming popular

between 1760 and 1770, owing probably to the initiative of the immigrants like the Culleys and Grey. Of course the improved courses brought higher yields and enabled more and better cattle to be kept, and the profits made were reinvested in the reclamation of waste lands. The Culleys whose yields when they entered their farm were valued at 15 bushels of oats and 9 bushels of wheat rose by 1801 to 84 bushels of oats, 62 of wheat, and 72 bushels of barley—if that can be believed.

No doubt an increasing acreage was sown to wheat during the wars, and the advantages of high prices secured, but after the wars from 1816 to 1840 was a period of depression only illumined by brief flashes of a returning prosperity. However that did not prevent the work of improvement from going on in Northumberland where Grey, the Booths, Maynard, and others formed a small group, perhaps led by Culley, and certainly with the encouragement of men like Sir John Sinclair, for whom Grey corrected the proofs of *The Code of Agriculture*. Other men were joining the movement, and in the *British Farmer's Magazine* for August 1832 John Donaldson described how he had spent some years in the improvement of 600 acres in Northumberland. He had laid the old high crooked ridges flat and after weighing the advantages of the five and six course rotation put the whole farm under a five-year system: fallow or turnips, wheat or barley, hay or pasture, pasture, and oats.

This system, which was very flexible, was not really new to Northumbrian farms but was probably an improvement on the farm which Donaldson occupied. It was the five-course system that John Langhorne, a banker of Berwick-on-Tweed, used as his example when he gave evidence to the House of Lords Select Committee in 1836, a committee before which Grey also gave evidence.

Five years later Grey's essay, "A View of the Past and Present State of Agriculture in Northumberland," appeared in the *Journal* of the Royal Agricultural Society. It was his most considerable literary production, although his real claim to fame lay in his activity in the realm of practical affairs. In this essay the Northumbrian five-course system is fully described and is similar to that used by Donaldson, except that Grey started at a different point: first year after grass, oats; second, turnips and a small quantity of potatoes (a new element); third, spring wheat and barley; fourth, clover and other grasses; fifth, pasture. On the poorer land the grass was left down for a third year.

By this time oxen were no longer used for plowing, Langhorne having stated that four pairs of horses were necessary to do the work on 300 acres of arable. On many farms the improved Scotch plow, a swing plow, was used with two horses and a driver, an ideal which Arthur Young had begun to preach at least seventy years before. The prosperity of the war years combined with the open-mindedness of the farmers, had caused them to invest in threshing machines at an earlier date than other counties, and almost every large farm had one, when elsewhere, especially in the south of England, the harvest was still being laboriously threshed with the flail. The grass seed was sown with a drill, but the corn drill was not in general use, the reason being that the tilth was usually so good that seed could be broadcast without loss. Some land was limed every year, and bone dust was also used. The latter was a very recent introduction, said Langhorne in 1836, but Donaldson thought so well of it that he had installed a mill for crushing bones on the farm he was improving, some time before then.

Langhorne had estimated that the farmyard manure on a 300-acre farm was usually sufficient for two-thirds of the fallow land. Before bone dust came in, one-third of the fallow had generally been bare fallow, but since it became available, turnips could be grown on the whole area, yielding on the average between 20 and 24 tons. This was of great advantage to the farms having hills especially as no hay was required for the sheep in the winter as one-fifth of the tillage was always under turnips.

Grey, indeed, said that in 1841 the most recent improvements in his district were extensive and systematic draining, subsoil plowing, and the use of bone dust as a fertilizer, and remarked, with enthusiasm, that if furrow tile draining and subsoil plowing should change wheat and bean land to turnip land "what an immense increase of wealth to individuals, and of produce to the public, might be obtained!" On his own holding, which altogether comprised some 3,000 acres before he retired from active management, "not one acre or headland was observable, but to which every possible justice had been done. It was one of the model farms of a model country—Glendale."

The evolution of the Northumbrian five-course

system was the work of a band of improvers coming into a county where systems of husbandry varied widely and where it was possible to make steadily all advantageous innovations, but it took some seventy years to become fully established and to be widely recognized. And Grey's essay, describing the system, came at an opportune moment when farming was just about to enter upon a period of some forty years, prosperous in the main, which gave men in other districts the chance to adopt it, either as something entirely new to them or as a variation of the light-land Norfolk four-course system, which could, with the help of the newly devised system of field drainage, be used on much heavier soils.

The New Manures. The decade 1840–1850 saw the birth of the modern artificial fertilizer in terms of practical use. Nitrate of soda had begun to be imported from Chile and could be bought for 19s. 6d. a hundredweight, about 2,000 tons having been sold in 1839 and about 1,000 tons being in stock in London in 1840. East Indian saltpeter (nitrate of potash) was available for experimental purposes at 26s. 6d. a hundredweight, some 4,000 to 5,000 tons being in stock, but the importers estimated that a demand of 1,500 to 2,000 tons for agricultural purposes would raise the price too high for its use. It was not until the Stassfurt potash mine came into production in 1861 that a cheap supply of potash salts for farming became commercially possible. John Bennet Lawes' patent for the manufacture of superphosphate was taken out in 1842. The first imports of guano entered the country in 1840.

Before this time artificials were nonexistent, and the farmer, when he wanted to supplement any supplies of dung made on the farm, turned to organic waste or to the sort of soil mixing which was known as marling or claying. The last was used extensively in the eighteenth century in improving the texture of the light lands in the Eastern Counties where the Norfolk four-course system was worked out. It was also used later in the nineteenth century in fen improvement. Sea sand was used in some coastal areas to improve heavy land and brought a certain quantity of shells (calcium carbonate) with it to the soil. Chalk was taken across the Thames from the Kentish shore to the heavy lands of Essex. This process of soil mixing undoubtedly improved texture, but it can have done little or nothing to add plant food to the soil. A long list of waste material, seaweed, oyster shells, fish, ashes, soot, salt, rags, hair, malt dust, bones, horns, and blood, etc., is enumerated in many of the early textbooks on farming, and, as many of these things would come from town slaughterhouses or industry, they were fetched away by the farmers who brought their produce into the towns for sale, just as town stable manure was.

Chemistry and biochemistry in their modern sense were nonexistent then, and the only measure of the efficiency of any of these substances was the empirical one, the result. But towards the end of the seventeenth century many men were speculating on the growth processes of plants and the methods by which they got their food. In 1669 Sir Kenelme Digby made the experiment of using a weak solution of niter for stimulating the growth of barley plants, and a little later, in 1675, John Evelyn expressed the belief that if saltpeter were plentiful enough to be used farmers would need little else in the way of manure. The chemistry of the early nineteenth century did something to support this opinion.

Nitrogen was known to be present in vegetation. The question unsolved was how it got there. Théodore de Saussure thought it was absorbed through the atmosphere, and Justus von Liebig believed that also. Lawes, at Rothamsted, had been trying muriate and sulphate of ammonia obtained as a byproduct in the newly developing coal-gas industry before Liebig's report to the British Association in 1840, but, even so, it was not known for many years exactly how the application of a nitrogen fertilizer affected the plant. "The employment of ammoniacal salts," in fact, as Sir A. Daniel Hall said in his *Fertilisers and Manures*, seems to have begun at that time, "entirely upon theoretical grounds."

Amongst the waste material suggested by all the early farming textbooks, bones figure prominently, but John Worlidge in 1669 only suggested that experiments should be made with them. Since his *Systema Agriculturae* has been termed by later writers the first really systematic textbook, it may be that few bones were used in his day. It is, however, probable that both these and earlier farmers made a habit of collecting waste bones as well as other things when they took produce to market. It is not till 1774 that a record of their use exists in a letter written by Anthony St. Leger to Dr. Alexander Hunter of York stating that he had used crushed bones on grassland with good

effect. He added that in Sheffield "it has now become a trade to grind bones for the farmers." This doubtless included the waste from the making of knife handles. By the time of Erasmus Darwin (1800) and Humphry Davy, the chemists had given this material their benediction, and machines had been constructed for breaking up the bones into half-inch and quarter-inch sizes. The farmers must have found bones profitable for an import trade began after the wars and rose, despite an import duty, from about £16,000 in 1821 to £95,000 in 1826 afterwards fluctuating between £60,000 and £90,000 to 1832.

By the 1840s Liebig accused "Perfidious Albion" of robbing all other countries of their fertility. "Already in her eagerness for bones, she has turned up the battlefields of Leipsic, and Waterloo, and of the Crimea: already from the catacombs of Sicily she has carried away the skeletons of many successive generations.... Like a vampire she hangs upon the neck of Europe, nay, of the whole world, and sucks the heart blood from nations without a thought of justice towards them, without a shadow of lasting advantage to herself!"

It is perhaps fortunate that owing to the quarrel with Liebig, Lawes disclaimed the use of bones in his later superphosphate patent, confining his claim to minerals. This became possible because the Estremadura deposits in Spain were discovered by Captain Widdrington in 1843 and the coprolites near Cambridge by Professor J. S. Henslow in 1845.

Guano is another phosphatic fertilizer which had been discovered in the West Indies and the Pacific Ocean in the early nineteenth century and began to be imported, as noted above, in 1840. At first most of the guano imported was used in its natural state, but some of the sources of supply became exhausted, and most of the material came to be used in the manufacture of superphosphate. The one supply that continued to be used plain, so to speak, was that from Lobos Island. It was "naturally soft and in a fine state of division ... and forms one of the most valuable of the neutral phosphates that are so well adapted to light soils."

Other sources of supply of phosphate for use in the manufacture were sought for and discovered and of course led to the later discovery of rock phosphate of mineral origin which were later introduced to the farmer and to the fertilizer industry. But in 1840 there was little or no supply of potash fertilizer available other than that which could be "manufactured" by the farmer himself. Near the coast seaweed had for long been used as a fertilizer, both just as it was gathered and after burning into "kelp." Further inland and where wood was commonly used as household fuel, because "sea cole" was not brought to the inland villages, ashes were recognized as a valuable aid to fertility. In some places they were carefully collected and used, but obviously this was only a minute source of supply and quite insufficient to provide for all the crops grown in the neighborhood of any one village. Sir A. Daniel Hall cited a statement made by William Ellis, writing in 1750, that "at Long Marston, in Bucks, is a potash kiln, where they made ashes from bean straw for the most part, and sell a vat of them, which contains 32 five-bushel sacks, which dresses one acre for fourteen shillings, to be shovelled out of a cart or wagon, and throwed over grass land in this month (July) or at any time till Candlemass." This is an isolated example, and though it may have been duplicated in other parts of the country, it cannot have been very usual, or reference to the process would be frequent in the farming textbooks of the day, which it is not.

These "natural" but very limited supplies were to some extent supplemented by East Indian nitrate of potash (saltpeter) about 1840, but even this supply was small. The importers thought that any increase in the agricultural demand would raise the price above what the farmers could afford to pay or could find profitable. Perhaps this did not very much matter before the coming of the root break. Then the main sales off the farm were grain and meat. The straw was returned to the soil as manure from the fold yard and so on. The straw brought back a large proportion of the potash which had been absorbed by the growing crop, but when the turnip, the mangold, and the potato came to be commonly grown, more potash was required than that so simply returned whence it had come. The need is usually sufficient to stimulate its fulfillment, and although it was not till 1861 that an adequate supply of potash came on the market with the beginning of the output from Stassfurt, large export was then arranged to England. Liebig's invective might have declaimed against this export once again.

There is, of course, some measure of truth in it because Great Britain has been a large importer of fertilizers from overseas for a century and, moreover, has imported large quantities of feeding

stuffs, both of which has transferred soil fertility from the country of origin to Britain's fields. The import of some new chemical fertilizers and the manufacture of others was, however, one large factor in promoting the high farming which began about a century ago, and the interest these new fertilizers aroused in the farming community can be accurately measured by the appearance of no less than nine articles dealing with their use in the first volume of the *Journal* of the Royal Agricultural Society in 1840.

The New Machines. The reaping machine has been acclaimed as the outstanding contribution of the nineteenth century to farm mechanics, but it was a contribution made in the second half of the century. True the invention itself was designed in the first half, but it is significant that it is only mentioned in a list of patents by J. Allen Ransome's *The Implements of Agriculture* (1843) and does not appear at all in Robert Ritchie's *Farm Engineer* (1849). The fact that two such books could be published and that reaping machines had been invented shows, however, that developments in the realm of farm engineering as in other departments of the farm were, and had been, taking place.

Two things had been developed in the eighteenth century and had become practical politics on the farm by the fourth decade of the nineteenth. They were the seed drill and the threshing machine. Ransome's list of patent specifications shows also that improvements were being made both in the designs and the materials used in the making of the implements in general use on the farm. But not all the great innovators took out patents. The name of Jethro Tull does not appear among those who patented seed drills; neither does that of James Smith or Patrick Bell among those who were pioneers in the making of reaping machines.

The idea of a seed drill was not new when Jethro Tull made his. Indeed it was not new in Ancient Assyria, but in England Tull was the man who made the first seed drill that worked and thus laid in 1731 the foundation of a controversy that lasted a century or more, whether to drill and hoe between the rows or sow broadcast and weed as possible. Many volumes were written to prove the case one way or the other, and I suspect many an hour was spent in many a village inn or farm kitchen discussing the same subject. The obvious advantages of the seed drill are so great, however, that it was bound to come although like everything else in farming it came slowly. Between the date of Tull's invention and 1842, about a hundred years, some thirty-odd patents were taken out for machines designed to drill seed or sow corn. These were by no means the total of designs. Cooke's drill plow was one that was not patented, and there were several others so that the total number of apparatus made for this purpose, some of which worked and some did not, was fairly large. By 1842 both the modern types of drill had practically reached their modern form, and amongst these the Hornsby and the Garrett still remain familiar names. These machines were, of course, like others, more readily turned out in the factories that had been built in the early years of the nineteenth century than in the workshops of the village carpenter, or wheelwright, or even in the cabinetmakers' shops in London as they sometimes were in the eighteenth century.

The other eighteenth-century major invention was the threshing machine, and this was generally used in Northumbria and in Lanark when William Cobbett visited these parts in 1832. It was not general elsewhere in England, but in most counties a few of these machines were to be found, and during the "Captain Swing" riots of 1830 and 1831 in the south they came in for the greatest hatred by the laborers who saw their indoor winter piecerate occupation, threshing with the flail, vanishing.

The invention had a checkered career until it reached its modern form. The first design made and patented by Michael Menzies in 1734 worked on the flail principle, but the speed at which it worked broke the flails. About fifty years later Andrew Meikle produced a sort of peg-drum thresher while others were attempting to do the work with rollers. Between 1734 and 1842, some 29 patents were taken out for threshing machines, and the machine had at the later date become a well-established part of the equipment of large-scale farmers. Then it was driven by wind, water, horse gear, or steam. The latter, a favorite method in the northern area, was produced by a fixed steam engine. The earliest advance on this fixed engine, which was of strictly limited service on the farm, was to put it on wheels so that it could be hauled to different sites by horses. This type of portable engine is still to be found and so late as the 1914–18 war was widely used for driving portable saw benches. Its use in the 1840s and 1850s was for driving the portable threshing tackle

with which some contractors traveled from farm to farm. A measure of the rate of development is given by Clayton and Shuttleworth's output (see J. A. Scott Watson and May Elliot Hobbs, *Great Farmers*, 1937). It was 140 portable engines in 1851 rising to 491 in 1855.

But before the crop can be threshed or even drilled the ground must be prepared, and the eighteenth century had provided some innovations in plow making, not the least of which was the establishment of manufactories, Small's in Scotland and Ransome's in England, for this purpose, which were ultimately to take the job away from the local carpenter and blacksmith. Small, who established his works in 1763, was the first inventor of the cast-iron moldboard. Before his day this part of the plow was made of wood, sometimes protected by an iron plate. The next development was to make the beam and handles of iron in place of the timber formerly used. This obviously made the plow a factory job. Shares were made of wrought iron, but in 1785 Robert Ransome of Ipswich took out a patent for a cast-iron share and in 1803 followed this with a patent for a case-hardened cast-iron share, which was much cheaper, longer-lived, and easily renewed. Meanwhile other makers had also been engaged on the design of iron plows, and the theory of the draught of plows and their work had been explored in a number of treatises.

Harrows and cultivators had also been improved in the eighteenth century, innumerable patterns and types figuring in the textbooks of the time, but only eight patents are included in Ransome's list. Of these the most important was Finlayson's patent self-cleaning harrow (1838), Armstrong's zigzag harrow (1839), and perhaps Arthur Biddall's scarifier, first introduced about 1810, but by 1843 being made mainly of cast iron. Much the same can be said of rollers, many types of which were tried in the eighteenth century. Crosskill's clod crusher was the great improvement of the 1840s, and its use is said to have been effective in preventing the ravages of wireworm. The ordinary flat cylindrical roller, the drill roller, and the seam presser were also in use then.

Neither the reaping machine nor the steam-traction engine were widely used until well on in the second half of the nineteenth century, but both were invented in the first half, and the greater part of Ritchie's *Farm Engineer* is devoted to the "extended application of steam as motive power at farms." In it, however, steam plowing is only anticipated as a possibility and "very chimerical" to many people. There was then, he admitted, "no appearance of these sanguine views" of its use "being at present realised." Only nine years later Fowler showed a steam-plowing set at the Royal Show and was awarded the prize of £500 which had been an offer for the previous three years. In 1860 he made a further improvement by showing the double engine tackle which became the normal method of steam plowing and the most advanced system of mechanized farming until the coming of the internal combustion engine. Later still in 1871 Aveling got a £50 prize at the Royal Show for a self-propelling steam-traction engine to haul machinery from one farm to another to do contract work, but this was twenty-two years after he had taken out his first patent in 1859. Neither of these men was the originator of the idea. The first patent for steam plowing was taken out in 1810 and others in 1814 and 1816, but they did not come to anything, although they embodied the general principles of success. In 1832 John Heathcote tried to apply a heavy steam engine mounted on a primitive type of caterpillar track to moss drainage, but although it had some success it was so heavy that when it was left overnight on Lochar Moss it sank out of sight. Several other patents were granted between 1837 and 1854, but Fowler was the first to make a practical success of steam plowing.

Similarly the reaper was regarded as an impossibility in the early years of the nineteenth century, but James Smith of Deanston made one that worked, and five patents were taken out between 1799 and 1814. It rested with Patrick Bell to build the first really successful machine in 1828. This machine was tried by its inventor in secrecy at dark of night, and somewhat to his surprise, as it appears, it worked. An award of £50 was made to Bell by the Highland and Agricultural Society. Though shown at a good many farms, it did not come to much and fell into obscurity when Bell went to America in 1833. The beginning of the practical use of the reaper was the showing of McCormick's and Hussey's American machines at the Great Exhibition of 1851. Forty years after his invention had been tried so cautiously, Bell was given a piece of plate and £1,000 by the Highland and Agricultural Society as an appreciation of an invention, only worth a £500 award when it was first shown to the society.

A farmer a century ago, then, had improved implements for the preparation of the seed bed, plows, harrows, cultivators, and rollers, made in factories so that each was alike and a man could depend upon getting exactly what he ordered and not something that approximated thereto and might work well or ill. He had the seed drill in its modern form, and he had the threshing machine which could be driven by wind, water, steam, or horse gear. Two further benefits were on the way, namely steam plowing and the reaper. With such things to ease the heavy labor it is not surprising that he was encouraged to practice a husbandry superior to that of his forebears and really go in for "high farming" until the pressure of circumstances beyond his control brought disaster upon the industry.

The New Education. Samuel Hartlib, that "friend of Cromwell," proposed a "Colledge of Husbandry" in 1651, nearly two hundred years before the Royal Agricultural College, the first farming educational foundation in England, was established. During the whole of these two centuries, the farmer's only recourse was self-improvement by the home study of the numerous and often very fallacious textbooks that were published or mutual improvement through discussion and other societies that began to be formed in the eighteenth century on the pattern of "The Honourable Society of Improvers in the Knowledge of Agriculture in Scotland" (1723–1745).

Many of these societies did excellent work in the diffusion of useful knowledge amongst farmers, but the farmers amongst whom the knowledge was diffused were most usually landowners who were literate in an age when the farming community as a whole was unlettered, and, no doubt, Parson Trulliber was an exemplar of many who should have been receptive, but whose farming showed no signs of mental elasticity.

The Society for the Encouragement of Arts, Manufactures and Commerce was founded in London in 1754 and in its early years was largely concerned with farming. It offered many prizes for experimental work, for machinery designs, and for good service by laborers and so on, and published two volumes of *Memoirs of Agriculture* before it began its *Journal*. Thirty years later the Highland Society of Scotland was formed, and this shortly spread its interest to cover the whole of Scotland. It offered, amongst many others of an industrial type, the same sort of premiums for farming as the Society of Arts. Meanwhile, owing to the energy and agricultural enthusiasm of Edmund Rack, the Bath and West of England Society was founded in 1777. Many other more local societies began at about the same time or a little later. The objects of all, national or local, were alike. They wanted descriptions of new methods and new and profitable crops for publication in order that they should become well-known.

At the same time individual great landowners began to take part in the work of propaganda for improved methods. These, while they introduced few or no actual innovations, acted as influential publicists and exponents of the best practices of their day. Amongst such were "Turnip" Townshend, Coke of Holkham, the Dukes of Bedford, and many others. The two last promoted the annual sheep shearings at Holkham and Woburn, great gatherings where the owners' methods of farming were shown to farmers and landowners from all over the country and where examples of fine livestock were gathered together. Later on in the early nineteenth century, a similar show was put on by John Christian Curwen at Schoose Farm in Cumberland. These three shows were the precursors of those organized by the Royal Agricultural Society in 1839 and annually thereafter, by the Highland, the Bath and West, and the many smaller affairs of the same kind run by local societies as the nineteenth century advanced.

Meanwhile Arthur Young had made his Tours, and the Board of Agriculture (1793–1822) had come and gone. Young's vast personal contribution to the literature of farming, his meticulous descriptions of the methods practiced in different parts of the country, and his nose for novelty had made generally available a mass of information formerly confined to strictly limited localities. And the nation-wide survey of farming practices carried out by the Board between 1793 and 1816 elaborated this information still more.

All this was very well as self and mutual help but its advantages were confined to the landowner and large-scale farmer, although the example of these men in their own neighborhood necessarily had some effect. Coke himself, however, remarked that his improvements did not spread at the rate of a mile a year.

Three actual teaching institutions were founded in the eighteenth century. The first was the chair of agriculture and rural economy at Edin-

burgh, established in 1790, the incumbent being Andrew Coventry, followed by David Low, an extensive writer as well as an able lecturer. The third was a part-time professorship at Oxford set up in 1796, where Charles Daubeny took the chair. He also was a prolific writer and later lectured to the Royal Society. The second was the Royal Veterinary College of London, founded in 1791.

The necessity for a veterinary college had been the subject of discussion by the Odiham Agricultural Society for some six years, and it only became an entity after Charles Vial St. Bel (or de Sainbel, 1750–1793) had come from France with a project for its constitution. Only two years later St. Bel died of glanders contracted while treating a horse, and indeed, descended as the veterinary science of those days was from farriery, the college at first restricted itself to horse trouble. St. Bel was succeeded by Edward Coleman who died in 1839 just after the Royal Agricultural Society of England had been formed. The society took a larger interest in the Royal Veterinary College than in the wider teaching provided by the two universities, perhaps because of the first outbreak of foot and mouth disease at that moment. It provided some £200 a year to enable the college to give instruction in the pathology of cattle and sheep. But the college authorities were apathetic in spite of the occurrence of contagious pleuropneumonia in 1841 and its spread far and wide by 1847. Sheep pox also broke out in the last year. The fact was there was "much empirical knowledge" of cattle diseases "but little hope of finding remedies," so the society brought over Professor J. B. Simonds from Belgium to advise its members, the council of the society paying his fees and the members his traveling expenses. By 1852 arrangements had been made with the college for members to send cattle, sheep, and pigs for observation, treatment, and post-mortem examination, and the college undertook to investigate particular diseases as the council of the society might direct. Perhaps it was at this point that modern veterinary science was really born, the college learning by investigation and imparting its knowledge to a growing number of students, who were in turn able to use that knowledge in aid of the farmer. The work of the college was, however, the training of specialists who could help the farmer rather than training farmers in the widespread ramifications of their industry.

Little enough had resulted from the endowments at Edinburgh and Oxford. In Scotland the professors had to find other work in order to maintain themselves. At Oxford the failure of a farmer to pay his rent meant that the professor got no pay, and it was not till 1908 that it became a whole-time job. The appointment then went to Professor William Somerville who was the first graduate in agriculture turned out by Edinburgh, a sufficient comment upon the length of time necessary for that university to devise an adequate agricultural curriculum.

The spirit which formed the Royal Agricultural Society was abroad in the land in the 1840s, and in 1842 at just such another local farmer's club as had proposed the Royal Veterinary College the Royal Agricultural College was proposed by Robert Jeffries Brown. The society was that of Cirencester and Fairford, and the title of Brown's address reads: "On the Advantages of a Specific Education for Agricultural Pursuits." The society proceeded to proselytize the local bigwigs and to hold meetings and conduct other propaganda with the concrete result that in 1845 Lord Bathurst offered a farm of 400 acres on a long lease and a building site for 99 years. From then on things went well, and in the next few months something like £12,000 was subscribed towards the project, and the Royal Agricultural College was opened in 1846. Charles Dickens, in his *All the Year Round* for October 10, 1868, while not uncritical of the initial mistakes which landed it heavily in debt, praised it as the only one of its kind "at the same time satisfactory and self-supporting." Unlike the comparable Continental schools it had been founded "not by Government, but by working farmers." It had not received a farthing of public money nor any support, curiously enough, from the Royal Agricultural Society, which such an enterprise might have expected. Individual members of the society had, however, been heavy subscribers as private persons, and the reason for its burden of debt was perhaps the too ambitious scale of building and the too ample provision for the students, both physical and mental, at inadequate fees. The college provided a 2-year course of instruction and had "professors" of chemistry, agriculture, natural history, anatomy, physiology and hygiene, as well as a teacher of drawing from South Kensington.

It was not until 1868 that the Royal Agricultural Society began its own examination for prizes to

students of farming, but the subjects which had to be presented could only be studied at the Royal Agricultural College or at Edinburgh until 1882. The society's second examination was inaugurated in 1874. The *Journal* continued its educational work amongst the members. The series of descriptive county essays, while briefer, followed in the line of the much more bulky works produced by the old Board of Agriculture. Lectures were provided and a large number of short practical articles of the kind that now find their place in the weekly agricultural press were included. Moreover most of the experimental work done by John Bennet Lawes and Joseph Henry Gilbert at Rothamsted was first published in the *Journal*.

By the 1840s the Royal Veterinary College had begun to take an interest in work on farm animals. There were two university departments dealing with farming, although in a rather ineffective way. The Royal Agricultural College offered its benefits to a limited number of students. There were three or four major agricultural societies and dozens of small local groups all doing work of mutual improvement. And, what is more to the point, times were looking up for farmers after the great depression following the French wars, so that they were able to take advantage of this spate of "education" so suddenly placed at their disposal.

Large-Scale Reclamation. In the eighteenth century the majority of English villages were farmed on what was known as the open-field system. This meant that each farm consisted of a series of strips of about an acre, half acre, or similar size intermixed with the strips belonging to the other farms, and scattered over two, three, or more huge fields which contained the whole of the village arable land. Besides these fields there were meadows and the village waste. The inconveniences of the system are obvious, a great deal of time being wasted by going from one distant strip to another with horses, plows, and other tackle. The "improvers" of that time went in for enclosure, which meant that the arable lands were redistributed in consolidated blocks which could be farmed more easily, and the enclosure of the adjoining waste lands, previously just wild grass grazing, made these lands also potentially more productive.

The whole process was costly, because of the legislation necessary, a special Act of Parliament having usually to be passed for each village, and because of the rebuilding of farms, the making of new hedges and fences, and so on. Large landowners had found work for their surplus capital and their administrative energy in this work, but by the forties of the nineteenth century it was practically complete. Nevertheless rich men were still fired with the ambition to make the soil of their country more productive, and apart from the improvements in technique which they could apply to lands already under cultivation, were obliged to look to the wide areas of "marsh, moor and fen," previously considered quite unsuitable for cultivation, for its fulfillment.

Such areas were Chat Moss in Lancashire, a large acreage of peat bog; Exmoor Forest in Devon, heather and peat moorland of high altitude; Whittlesea Mere in the eastern fens, which was a shallow lake surrounded by an area of boggy land lying in the midst of the large areas between Cambridge and Peterborough, drained in the seventeenth and eighteenth centuries, and known as the Bedford Level.

The first attempt to reclaim part of Chat Moss was made during the Napoleonic Wars, probably encouraged by the prevailing high prices, and was made by Roscoe who is said to have lost a great deal of money by it. The area he cultivated had by 1836 passed into the hands of Baines, Member of Parliament for Leeds, and was said, when it had been cultivated for twenty years, to have become something approaching good land with fine crops of good wheat upon it. Whether the reclamation was profitable or not is another matter. Perhaps it was for the second holder, who had the benefit of Roscoe's losses.

In 1829 John Ellis and some friends took a lease on 660 acres of untouched bog for 68 years as a speculation, being encouraged "as a result of the railway going over it." The work necessary was lengthy, arduous, and expensive. First it had to be laid moderately dry. This in itself took time. Drains a foot deep were cut with spades and left till the water had run off. Then another drain a foot deep was cut, and again a wait until dry; then a narrow cut was made at the bottom and covered in with a turf to make a hollow drain some 3 or 4 feet deep. Ellis reckoned that it was two years before the land was dry enough to take implements on it, and even then the horses had to plow with pattens (shoes of plank) on their feet to prevent them sinking in. Large quantities of stable manure were brought from Manchester by rail,

and temporary railways had been laid across the bog where the work was going on. Under the terms of the lease marl could be dug on Trafford's estate all round the Moss at an agreed price, and this was laid on the drained bog at 120 tons an acre, costing £4 7s., and was supplemented by 40 tons an acre of the Manchester stable manure costing £9.

The first plowing which cost about 10 shillings an acre was followed by two or three harrowings on bare fallow, not a very serious degree of cultivation at a time when land was occasionally plowed six times and harrowed six or even eight times to make a seed bed. The first crop taken was potatoes, and Ellis estimated that the total cost of preparing for this crop was £18 2s. an acre. In a good season like 1830 he reckoned to get a crop of between 250 and 300 bushels an acre, but in dry weather the yield was very poor. Wheat was taken next, but only gave 16 to 24 bushels. Red clover followed, of which part was mown and sold in Manchester, and the rest made into hay. Wheat was then taken again. After this Ellis reckoned that the land needed draining again as it had sunk, but he did think there would come a time when it was solid, and he frankly admitted that it did not pay as a farm. He and his friends were looking forward to a time when it would be dry enough for speculative building. They hoped to put up country homes for the well-to-do of the thriving cotton town of Manchester. He added that other speculators had followed his example and taken parts of the Moss at even higher rents. Chat Moss was thus cut into and gradually brought into use by groups of speculators.

The reclamation of Exmoor Forest was a much more grandiose scheme and was undertaken by a single individual, John Knight. Necessarily he was a wealthy man. His forebears had been ironmasters since Cromwell's day, and so, when the King disposed of the Forest, Knight was able to pay £50,000 for a block of 10,262 acres, rather too high a price for such land, and to add some 5,000 acres more to this estate by subsequent purchase, so that in 1818 he possessed 15,000 acres of unreclaimed land on which there was only one small farm at Simonsbath, no roads, no fences, nothing but a few sheep taken in for the summer at agistment and yielding a rent of about £300 a year from the total 20,000 acres which comprised the moor.

The first thing Knight did was to build a wall 29 miles long around his estate and turn some of the ancient trackways over the moor into roads. From 1820 to 1841, Knight and his son, Frederick, attempted to farm the land themselves. The boggy nature of the land immediately suggested that drainage was the primary essential, and many miles of surface drains were cut which remain to this day, but they entirely failed to carry out their function. Then they began to break up the land in the neighborhood of Simonsbath with bullock teams. The system adopted had proved successful in the Eastern Counties and was probably learned from Coke of Norfolk. The top soil was pared, stacked in small heaps to dry, and then burned, the ashes being spread over the soil as manure. Heavy doses of lime, all of which had to be brought long distances, were given. The land was subsoiled to break up the clay iron pan, which was only a few inches below the surface, and then an attempt was made to grow wheat and barley with the help of clover, and turnips "under the impossible climatic conditions of Exmoor." Some 2,500 acres were under this method by 1845.

Large numbers of Highland cattle were brought from Scotland and Whitefaces from Hereford, but, in the absence of Texas cowboys, the Highland beasts proved too wild to drive to market when ready, one herd dashing all over the countryside goring everyone they met and finally having to be shot when found. The local red Devon had to take their place, and in 1840 the cattle sales amounted to £7,000. The introduction of Cheviot sheep also had important results at a later date, but the attempt to breed Merinos was obviously doomed to failure.

Although a great deal had been done by 1840 it was by then clear that it had been a mistake to try to farm the whole area direct, and after that date an attempt to develop tenant farming began. Houses were put in hand, and by 1848, when Robert Smith became the agent, a good deal of building had been done, about twelve farms being ready or in occupation. The first comers, however, tried to use the farming systems they had been used to elsewhere, and there was a quick turnover in the tenants who were said to have come "in their po-Chaises and went in their dung-carts." Smith soon realized that lowland arable farming was impossible, and root growing and rotation grasses to improve the stock-carrying capacity became the objective. After many vicissitudes a suitable system was evolved, and the

modern map of Exmoor shows some twenty farms which have been developed by rape reclamation and sheep ranching.

Whittlesea Mere, lying just south of Peterborough, was in Queen Elizabeth's time a lake 6 miles long by 3 miles wide. By 1850 it had dwindled to a marshy pool of some 1,600 acres surrounded by peat bogs, covered with sedge and rush, of about the same size. The change had been caused by the extensive drainage of some 750,000 acres of fenland surrounding the lake, which had been carried out in the interval of two centuries. The drains cut and improved between 1800 and 1850 had made it possible to drain the area dry and make farms of it. Indeed it had already dried up of its own accord for a time in 1826. It was owned by William Wells of Holme. The first attempt to drain it was not successful for the water broke back again in 1852, but the Apfold pumping engine which had been installed proved capable of dealing with this inundation, and the land was laid dry again.

The methods of reclamation of fenland, which had been worked out during the previous two hundred years, did not call for the same kind of originality in Wells and his collaborators as the reclamation of Exmoor did. It was not a new business in spite of the difficulty of getting wet ground into cultivation. The problems involved were much like those of Chat Moss, for example. The horses had at first to be shod with planks, and much of the cultivation for the first crop of rape was done by hand. The process was draining by open or covered drains, paring and burning of peat, the claying of the surface, and the growing of a crop of rape for cattle and sheep feeding as a preparation for wheat to be followed by a crop rotation which usually included a ley of two years or more. The preliminary work was costly as always, the claying alone here being from £15 to £16 and up to £18 or £19 an acre. However, the work was so successful that by 1860 the "money value of the produce of 3,000 acres reached £12,350." It may be said that Wells laid out the land in farms for tenants and did not attempt to farm the reclaimed land himself.

These three examples are sufficient to show how enthusiastic the landowners of a century ago were for the expansion of their estates, and how much capital and labor was sunk in the making of new land in England in such recent times.

THE AMERICAN AGRICULTURAL WAGE EARNER, 1865–1900

The Emergence of a Modern Labor Problem

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A weight of evidence that can be ignored but can not be denied has established the presence in contemporary American agriculture of a farm-labor problem, a problem distinct from that of the employing farmer in search of labor or from that of the laboring farm owner in pursuit of a secure and comfortable living.[1] It is as much a social problem as were the conditions of employment in the early nineteenth-century factories of England and America. In terms of status, personal relationships, and opportunity for economic independence, a gulf exists between the traditional hired man and large numbers of the present farm-labor force comparable to that between the medieval apprentice and the country weavers of the putting-out system.

The activities of the Industrial Workers of the World in the second decade of the twentieth century and the disclosures of the Commission on Industrial Relations during World War I brought some awareness of the problem of casual farm labor, but widespread public attention was first aroused by the wave of farm strikes in the mid-thirties and by the vivid pages of John Steinbeck's *The Grapes of Wrath*. Subsequent waning of interest has been due in part to the

[1] This article presents a segment of an extensive historical study on farm labor in the United States. At least two topics here mentioned, namely the role of wage labor in the transition from slavery to tenancy and the later relationships of southern laborers and landowners, are being dealt with separately.—*Editor.*

alleviation brought by war and post-war full employment. Yet the report of the Federal Interagency Committee on Migrant Labor issued in March 1947 is evidence that the social problem remains; and the first convention of the American Federation of Labor's National Farm Labor Union (the successor of the Southern Tenant Farmers' Union), suggests that it will increasingly be approached as essentially a *labor* problem.

The roots of the contemporary farm-labor situation, therefore, are of more than historical interest. And in fact, it has been the men seeking present-day solutions who have initiated the historical study of the agricultural wage earner.[2] Except for California, however, there are available only patchwork pieces of the story. Moreover, problems of farm labor as distinguished from those of agriculture generally have frequently been assumed peculiar to the twentieth century. The question raised here is the importance of the period between the Civil War and the opening of the twentieth century to the development of characteristics of farm-labor employment that do not square with the traditional hired-man-farm-operator relationship. This question leads to an inquiry as to whether casual labor and other atypical patterns of farm employment were established characteristics of American agriculture during those years; and if so, whether such patterns had already given rise to the social problems and conflict of economic interest associated with them in contemporary society. It also requires an examination of the status of the monthly wage earner on the grain or nonspecialty farm to determine whether in any respects even the "typical" pattern of farm labor more nearly resembled industrial employment rather than the tradition of the hired man on his way toward metamorphosis into family-farm operator.

One guide to the presence of laborers whose way of life contrasts with that of the hired man is the amount of money spent on a farm for wages. The characteristic family farm is worked by the farmer-operator and his sons with help at harvest time or with a hired man employed for most of the year. Areas where this type of farming predominates may have large aggregate labor bills, but the per-farm expenditures will not tend to rise above the national average. High per-farm expenditures mark divergent labor patterns. To determine whether marked wage variations existed during the period under consideration, use was made of the county census statistics for 1869 and 1899 which give aggregate labor expenditures as well as the number of farms in each county. Average labor expenditures per farm were computed, and all counties where the average was three (or nine) times the national average were indicated on maps, one for 1869 and one for 1899.[3]

In the earlier year, 226 counties appear on the map; at the end of the century there were 272. More than half of the high-wage counties of 1869 were in the South, most of them concentrated in the cotton areas of the black belt of Georgia and Alabama, in northern Florida, and along the Mississippi River. This irregular pattern of cotton counties completely disappears from the wage map of 1899. Both maps, however, point to southeastern Louisiana (sugar and rice), to areas along the Atlantic coast, to most of the Rocky Mountain States or Territories, and to California. Between 1869 and 1899 these areas of high-wage expenditures, except Louisiana, show a notable expansion, and to the borders of the western group are added extensive areas of western Texas and eastern Oregon and Washington. On the 1899 map the Red River Valley region also is prominent; otherwise, only a few scattered counties appear in the great agricultural Midwest.

A comparative glance at a contemporary map marking high-wage counties discloses an interesting resemblance between the general pattern now and in 1899.[4] The twentieth-century expansion of truck, fruit, sugar-beet, and western cotton production has not made as marked changes in the wage map as might have been expected. New counties have appeared, especially in Florida and in the irrigated lands of southern Arizona and

[2] Outstanding examples are the work of Carey McWilliams and Paul S. Taylor; even Carleton Parker and Paul Brissenden, whose studies of the I. W. W. are now classics, were economists rather than historians.

[3] In 1869 the national average expenditure was $116.65, so that the counties shown had averages of $350 or over. In 1899 the corresponding figures were $64 and $192. If these sums seem small, it should be recalled that they are averages based upon all farms, many of which undoubtedly spent nothing at all for farm labor.

[4] For a map of the average cash expenditure for farm labor per farm hiring labor in 1929, see J. C. Folsom and O. E. Baker, *A Graphic Summary of Farm Labor and Population* (U. S. Department of Agriculture, *Miscellaneous Publication 265*, 1937), 16.

California's Imperial Valley; but the general configuration is similar.

The appearance on a wage map of cotton counties in the deep South across which great plantations had extended in ante-bellum days is in some respects startling. Even when allowance is made for distortions due to inconsistencies and errors in collecting statistics during the confusion of Reconstruction, the expenditures in this region suggest the need for a careful reevaluation of the role of wage labor in the transition from slavery to tenancy. On the other hand, the continuing divergence of the post-Civil War cotton South from the northern family-farm-hired-man pattern of agriculture is well established though sometimes minimized by citation of statistics showing the increased numbers of small farms. In regions where Negroes were most highly concentrated in the days of slavery, tenancy has not proved a transition to ownership. Many large landholdings have survived in fact if not in farm census figures, and sharecroppers together with large numbers of other tenants have not enjoyed the independence or status of northern farm operators.

Generalizations about American farm labor are not accurate unless they give due weight to southern workers. This is true even if one wishes to distinguish the money wage earner from such other nonindependent farm labor as the sharecropper and certain tenant farmers. Of the 2,885,996 farm laborers so classified in the Census of 1870, 947,283 lived in six States of the deep South; and the entire South held 1,708,513 or 59 percent of all. Even in 1900 when tenancy was fully established, the South had 47 percent of the nonfamily workers, 55 percent of all persons classified as farm laborers.[5] The men, women, and children whose lives centered in the cotton fields undoubtedly have been the largest single segment of American farm labor in contrast to the hired man.

Personal relationships between employer and employee are not usual in nonfamily farm agriculture, but they survived slavery in the South. The relationship, however, was not one between social equals as in the case of hired hand and farmer. Nor did it eliminate evidences of conflicting economic interest which generally characterize agriculture that is carried on primarily as an industry for profit rather than as a personal way of life. True, attempts on the part of Negro field labor to strike and organize were infrequent after Reconstruction. There exists, however, an interesting account of a strike for higher wages by Negro workers on Louisiana sugar plantations in 1880. The Negroes went from plantation to plantation getting others to join them. The State militia was sent out and the ringleaders were arrested, tried, and imprisoned for trespass. Petitioning the governor for pardon, they stated that they had thought it within their rights to go where other laborers were working, even though on the property of an individual, and induce those laborers to join them. They now understood this to be a violation of the law. "When laborers differ with their employers hereafter about the price of their labor," the petition read, "it will be in a peaceable manner and with law always on their side." They were released and "quiet was restored."[6] Except for the petition, the incident might have occurred in California during the 1930s. Conflict between southern laborer and landowner took forms other than overt clashes. Most notable was the continued bargaining throughout the period over wages, shares, or cash rentals, with each party trying to obtain whichever arrangement would assure him the largest income.

Southern staple crops had seasonal labor peaks, but most southern farm laborers were year-round residents rather than seasonal or casual workers. But the need for casual labor, both in the South and North, developed with the expansion of vegetable, berry, and fruit production. Part of the increased production went into the rapidly developing canning industry; in 1899 no less than 213,739,992 cans of tomatoes found their way to grocery shelves. Large quantities of the "most delicate of garden products" were destined not for tins but for the tables of northern cities.[7]

Market gardening antedated the Civil War, but during the following decades it graduated into the status of truck farming, that is the growing of

[5] The six States are South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana. These States plus Virginia, West Virginia, North Carolina, Texas, Tennessee, Kentucky, and Arkansas constitute the entire South. U. S. Census Office, 9th Census, 1870, *Census Reports*, 1:720–765, 3:812; and 12th Census, 1900, *Census Reports*, 2:505, 510–549. Tenants were classified as farmers, not as farm laborers.

[6] *Appletons' Annual Cyclopaedia . . . 1880*, 482.

[7] U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:302–304.

fresh produce for distant markets. Developments in transportation stimulated its growth. The modern refrigerator car was in an experimental stage from the late sixties through the eighties, but during those years shipments were made by small refrigerator chests, box cars, stock cars, and special ventilated fruit cars equipped with springs and wire netting. The success of refrigerator cars assured the permanence of the truck industry, and by 1900 there were an estimated 60,000 cars in service in the United States, Canada, and Mexico.[8]

Truck farming had not waited upon rail transportation. Northern markets were supplied by fast sailing vessels and steamboats from Maryland's eastern shore and south along the Atlantic coast. Norfolk, the earliest important center, shipped north a million dollars worth of tomatoes, peas, potatoes, strawberries, and other fresh products in 1869. Before 1900 the industry stretched southward through the older centers of Wilmington, Charleston, and Savannah, around the tip of Florida to Mobile and Galveston. Florida growers were finding truck produce their most profitable crop in the mid-eighties, and less hazardous than orange culture. They were not yet competing with the hot beds near Boston and New York in the extremely perishable crops; but by 1899, when rapid freight connections were well established, Florida had more acres in lettuce than any other State in the Union.[9]

Rail, rather than water, transportation found markets in Saint Louis, Chicago, and Cincinnati for Georgia peaches and for the potatoes, strawberries, and tomatoes grown in Mississippi, Louisiana, Texas, Arkansas, and Tennessee.[10] When in 1888 refrigerator cars were first used to rush California fruits to New York City, the State's citrus products were already known in eastern cities; and by the end of the century the annual shipment was more than 6,000 carloads.[11] The increased demand for fruits and vegetables also profited areas nearer to the great cities, southern Illinois and Michigan, New Jersey, Long Island, the lower Hudson Valley, and New England.

Fruits and vegetables often brought their growers very considerable cash incomes. The New England crop in 1870 was reported to have yielded "handsome returns."[12] Gross receipts on truck farms near New York ranged from $300 to $2,000 an acre in 1865, and an 80-acre New Jersey farm, with most of its acreage in regular field crops, netted $6,000 just from tomatoes, potatoes, and peas.[13] A company-operated peach orchard in Maryland made an annual profit of from $20,000 to $30,000 in the early seventies.[14]

All along the Atlantic coast, fruit and truck crops created a need for greater numbers of agricultural wage earners; and in the North Atlantic States where old staple crops were particularly hard hit by western competition, other specialties, notably Connecticut Valley tobacco, added to the labor demand.[15] In the decade of the eighties, the proportion of farm laborers in the nation-wide farm population dropped from 43 to 35 percent, but the proportion of farm workers to farmers increased in Massachusetts, Rhode

[8] *Ibid.*, 304–313; F. S. Earle, "Development of the Trucking Interests," U. S. Department of Agriculture, *Yearbook*, 1900, 441–442; William H. Taylor, "The Influence of Refrigeration on the Fruit Industry," *ibid.*, 574–580; Wells A. Sherman, *Merchandising Fruits and Vegetables* (New York, 1928), 23.

[9] U. S. Department of Agriculture, *Report*, 1869, 447; *ibid.*, 1870, 267; A. Oemler, "Truck Farming," *ibid.*, 1885, 584, 607–608; Earle, "Development of the Trucking Interests," 439–440; Sherman, *Merchandising Fruits and Vegetables*, 31; U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:339.

[10] Philip Alexander Bruce, *The Rise of the New South* (Philadelphia, 1905), 64–71; U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:304–305, 311.

[11] U. S. Interstate Commerce Commission, *Extracts from the Evidence and Proceedings in the Matter of Charges for the Refrigeration of Fruits and Vegetables* . . . (Chicago, 1905), 86.

[12] U. S. Department of Agriculture, *Report*, 1870, 266.

[13] *Ibid.*, 1865, 243–249, 252. However, by 1885 farmers on Long Island were abandoning market gardening for dairying. *Ibid.*, 1885, 583.

[14] *Ibid.*, 1871, 144.

[15] Clarence Irving Hendrickson, *An Economic Study of the Agriculture of the Connecticut Valley: A History of Tobacco Production in New England* (Connecticut Agricultural Experiment Station, *Bulletin 174*, Storrs, 1931); Elizabeth Ramsey, *The History of Tobacco Production in the Connecticut Valley* (Smith College Studies in History, v. 15, no. 3–4, Northampton, Mass., 1930); Fred A. Shannon, *The Farmer's Last Frontier; Agriculture, 1860–1897* (New York, 1945), 245–254; Harold Fisher Wilson, *The Hill Country of Northern New England* (New York, 1936); Edward H. Jenkins, *Connecticut Agriculture* (reprint from *History of Connecticut*, New Haven, 1926); Carl R. Woodward and Ingrid N. Waller, *New Jersey's Agricultural Experiment Station, 1880–1930* (New Brunswick, N. J., 1932).

Island, New York, and New Jersey. In the other North Atlantic States the decrease was not nearly so great as for the country as a whole, and in New York the increase was small. In the South the need for labor was supplied in large part by Negro workers whose bonds with the plantations had been loosened by the Civil War. White workers were also recruited from the cities for the seasonal demands of nearby fields. Around Norfolk in 1885 from 2,560 to 3,200 Negro hands were employed just to gather the strawberries.[16] In the nineties nearly 22,500 workers were employed in this area during the six peak weeks of the season. Some of the men, women, and boys and girls came from Richmond, from other interior cities of Virginia, and from North Carolina.[17]

Farther north, immigrants were an important source of the needed labor. Workers were often recruited from new arrivals in the cities or directly from Castle Garden, the Ellis Island of the period. As a New England farmer phrased it, "A farmer sends there and orders his help, and they are shipped to him."[18] First the older immigrant stock, Irish, Germans, and Swedes, took to the fields, then came the Italians and Poles. By the nineties, padrones were rounding up Italian families in Philadelphia for harvest work in New Jersey. Before the end of the decade, Polish people had replaced the Irish as the most important group of foreign-born farm labor in Massachusetts.[19]

In his report for 1870–71 the chief of the labor bureau of Massachusetts devoted considerable attention to the condition of farm labor in his State. He pointed out that a great change had occurred in New England through "the substitution of ignorant and unskilled foreign labor, for the intelligent, school-taught labor of the former era of our agriculture. . . ." Very rarely, he reported, was there to be found an active and intelligent person of American parentage employed as a hired farm laborer. The educational condition of farm laborers he found to be even lower than that of factory operatives; a large percentage of them could neither read nor write. Although the labor of women in the fields had "not yet been generally adopted," investigation disclosed that in Worcester County women did a great deal of farm work such as hoeing, shoveling, and raking; that in Franklin County they were employed in weeding tobacco, and that in Middlesex, Norfolk, and Essex counties women picked fruit and did weeding, hoeing, and haying. Irish women were said to labor extensively on land of their own but to work for others only in cases of emergency, at which times they received two-thirds of a man's pay. Boys were used chiefly in the cultivation of tobacco. The report predicted that if the demand for cheap labor continued "Mammon will say to farmers, as it has to manufacturers, 'take the children'. . . ."[20]

The report for the following year took notice of the employment of women of foreign nationality in the weeding and picking of small fruits and peas and beans and in the harvesting of potatoes and the stripping of tobacco plants. Commenting on the use of children in the lighter work of the fields, the labor chief called attention to the deficiencies in their education. Although schools were everywhere open to all, "these privileges are not universally and continuously made use of, and the compulsory educational law on the statute book is, as a general thing, *wholly neglected and inoperative*." The nationality of farm laborers was estimated at 50 percent Irish, 15 percent French-Canadian, 10 percent Nova Scotian, 5 percent German, and 20 percent native.[21]

The Massachusetts census for 1875 put the number of farm laborers in the State at 35,488.

[16] Oemler, "Truck Farming," 585.

[17] New York Bureau of Labor Statistics, *Annual Report*, 1892, 1:221.

[18] U. S. Industrial Commission, *Report* (57th Congress, 1st session, *House Document 179*, 1900–1902), 10:403. For other references to this method of hiring immigrant farm laborers, see *ibid.*, 10:83, 11:520; Connecticut Board of Agriculture, *Annual Report*, 1883, 127; Massachusetts Board of Agriculture, *Annual Report*, 1884, 103; New Jersey Board of Agriculture, *Annual Report*, 1888, 597.

[19] U. S. Industrial Commission, *Report*, 15:518–522, 526; U. S. Department of Agriculture, *Report*, 1870, 256; and its *Wages of Farm Labor in the United States; Results of Nine Statistical Investigations, from 1866 to 1892, with Extensive Inquiries concerning Wages from 1840 to 1865* (Division of Statistics, *Report*, misc. ser., 4, Washington, 1892), 26–27, 28; New Jersey Board of Agriculture, *Annual Report*, 1888, 517, 523, 542, 550, 574, 596.

[20] Massachusetts Bureau of Statistics of Labor, *Annual Report*, 1870–71, 155, 159–161. This report prompted the editorial, "The Labor Question in Massachusetts," in the *Nation*, 12:398 (June 8, 1871).

[21] Massachusetts Bureau of Statistics of Labor, *Annual Report*, 1871–72, 33–34.

Nearly 3,000 of these were girls and boys under fifteen, and over 7,500 were women. The total number of persons engaged in agriculture was listed as 70,945. The apparent fact that one-half of the persons engaged in agriculture in the State were paid laborers aroused public attention and concern. Carroll D. Wright, who had taken office as chief of the labor bureau in 1873, felt it necessary to point out that the women and children included in the number of farm laborers had not for the most part been reported in the number of those engaged in agriculture, so that the proportion of laborers to farmers was not so great as it seemed.[22]

Northern farming, unlike southern agriculture, had developed according to the family-farm-hired-man pattern. The shift in crops and in the composition of the labor force brought a distinct change in the relationship between the northern farmer and his help. The farmer came to look upon the laborer not as a temporary member of his household but as an important item in the cost, and consequently in the profit, of his business enterprise. After analyzing the problems which confronted him, a Massachusetts farmer in 1870 concluded: "What is needed to improve the farming interest is more and cheaper help. *Let the Asiatic come.* Ireland has almost run out, and those now here are getting too much Americanized to be very efficient help,—the best working for themselves and buying farms and the others earning their wages as easily as they can."[23] The chief of the labor bureau in summarizing the 1870 returns from questionnaires sent to farmers stated that "The price of labor is of as much importance to the farmer as it is to the manufacturer, and both alike look to cheap labor as their only relief."[24]

Two years earlier a speaker before a public meeting of the Massachusetts Board of Agriculture, in an address entitled "How To Make Farming Profitable," emphasized the need of employing more labor on the farm. He quoted a potato and small fruit grower as saying: " 'I get more returns, better returns, for the money I invest in labor than from that which I invest in manure, in land, or anything else.' "[25] In the early eighties, Maine farmers were receiving similar counsel. They were told: " . . . provided we are able to make our labor pay its way and pay a profit on the enterprise, the more labor we employ on the farm the greater the profits. No manufacturer ever built up a fortune on the employment of one laborer, or on the employment of his own hands alone. It is the employment of many laborers and in the accumulated profits of those many laborers that he builds up his income. It is precisely so in farming."[26]

The impersonal way in which immigrant labor was often recruited encouraged the business attitude toward farm workers. During a discussion of the labor problem at a Connecticut farmers' convention in the winter of 1887, a market gardener who hired men through a New York agent and got them "low enough" offered some interesting advice. "If you hire this class of men," he said, "there is one thing you must not do. Don't go into the field with them to work."[27] In 1891 a Massachusetts farmer succinctly summarized the changed status of farm wage earners: "The old-fashioned term, 'help,' has been dropped, and the word 'labor' used, with a peculiar significance."[28] A student of Massachusetts agriculture explained in 1900 that many farmers preferred foreign laborers because they worked for lower wages and were "satisfied to be regarded as servants."[29]

By 1900 New York farms had instituted a system of time cards, and wages by the day even for those regularly employed were becoming common.[30] Agricultural leaders in Massachusetts were by then of the opinion that the wide-awake farmer hired all the help he could with profit but "When profits cease he will be the first to discharge help which he does not need."[31] Even in Pennsylvania, which was much less affected by agricultural changes than were the neighboring States, the new employer consciousness of the farmer had become apparent. Investigating the complaint of farmers in the mid-eighties that wages were much too high in comparison with the price of farm products,

[22] Massachusetts Bureau of Statistics of Labor, *Compendium of the Census of Massachusetts: 1875*, 232–233; and its *Annual Report*, 1878, 180.

[23] *Ibid.*, 1870–71, 157.

[24] *Ibid.*, 156.

[25] Massachusetts Board of Agriculture, *Annual Report*, 1868, 151.

[26] Maine Board of Agriculture, *Annual Report*, 1881, 79.

[27] Connecticut Board of Agriculture, *Annual Report*, 1887, 310–311.

[28] Massachusetts Board of Agriculture, *Annual Report*, 1891, 415.

[29] U. S. Industrial Commission, *Report*, 11:89.

[30] *Ibid.*, 10:321.

[31] *Ibid.*, 885.

the secretary of the State Board of Agriculture reported: "Some claim that if the present proportions between the relative price of farm labor and farm products is maintained, the battle between capital (agricultural) and labor must soon take on a new phase."[32] And some years earlier a Pennsylvania farm laborer complained that employers cared nothing for the welfare of their employees and that there was "too much *extreme* social proscription."[33]

There were some farmer protests against the change in attitude, but such protests were in themselves an indication of the passing of the traditional hired man. One Connecticut farmer questioned the new standards in the following words: "Why then the laborer himself should receive so little true consideration from those who employ him upon the farm, I am at a loss to explain. It would seem, in numerous instances, as though he was from the beginning to the end of his service nothing more than a free slave, a drudge, to be fed and lodged, and worked to the limit of his ability."[34] A Maine farmer insisted that a good employer was "not a man who looks upon a laborer as a mere machine. . . . He does not show by his habitual bearing that he is conferring a favor by tolerating the presence of the workmen in his fields."[35]

Such admonitions would have found a more chill reception in California than in New England. Long before the Joads troubled the conscience of the Nation, the storied land of gold and sun had marked those who labored over its crops as an inferior class of mankind, the value of which varied inversely with the cost of its services.[36] These attitudes predated the expansion of orchards, vineyards, the fields of hops, berries, and sugar beets which began in the 1870s and gathered momentum in the 1880s. They had existed in the days of the great wheat ranches when the methods of mass production and the enormity of the yields, and of the profits, attracted national attention.[37] Their historical roots go back to the large landholdings of the Spanish period and the early days of the American cattle ranchers, when the pattern of large-scale agriculture was established. In the seventies, California land monopoly was under attack by those who wanted to see it replaced by the small-farm pattern of the Midwest. They declared it "contrary to the genius of our institutions" and stated that the fertile valleys of the State were "as effectually locked up to the indigent emigrant as are the deer parks and rabbit pastures of the English lord."[38]

The attack continued, but so did the large-scale commercial character of California agriculture. It depended upon an abundance of cheap labor that appeared when it was needed and then departed, and "how they afterwards maintain themselves is not known."[39] In 1869, the 159 farms of Merced County in the San Joaquin Valley had an average annual pay roll of $1,129, nine times the national average. In 1899, the farms had increased to just short of a thousand, and the average wage bill had dropped below its level in the post-Civil War years of inflation; yet computations based on the census reports show that it was eleven times as large as that of the country as a whole.

A revealing picture of the condition of farm labor in the State is presented in the testimony taken in 1876 by the congressional committee investigating Chinese immigration. By that date a large proportion of the field work was done by Chinese,

[32] Pennsylvania Board of Agriculture, *Agriculture of Pennsylvania*, 1886, 50.

[33] *Cultivator and Country Gentlemen*, 38:220 (Apr. 3, 1873).

[34] Connecticut Board of Agriculture, *Annual Report*, 1883–84, 105.

[35] Maine Board of Agriculture, *Annual Report*, 1889–90, 140.

[36] There are a number of studies dealing with the history of California farm labor; see Paul S. Taylor and Tom Vasey, "Historical Background of California Farm Labor," *Rural Sociology*, 1:281–295 (Sept. 1936); California State Relief Administration, Division of Special Surveys and Studies, *Migratory Labor in California* (San Francisco, 1936); Carey McWilliams, *Factories in the Field* (Boston, 1939); Varden Fuller, "The Supply of Agricultural Labor as a Factor in the Evolution of Farm Organization in California," in U. S. Congress, Senate Committee on Education and Labor, *Violations of Free Speech and Rights of Labor, Hearings . . . 76th Congress, 3rd session . . . Part 54: Agricultural Labor in California*, 19778–19898 (1940); Stuart Jamieson, *Labor Unionism in American Agriculture* (U. S. Bureau of Labor Statistics, *Bulletin 836*, 1945), 43–192.

[37] U. S. Department of Agriculture, *Monthly Reports*, 1874, 101; McWilliams, *Factories in the Field*, 50–56.

[38] California State Agricultural Society, *Transactions*, 1870–1871, 15–17, 83. On large landholdings and how they were acquired, see McWilliams, *Factories in the Field*, 12–25.

[39] California Bureau of Labor Statistics, *Biennial Report*, 1883–1884, 121.

particularly in the vineyards and orchards.[40] They were customarily hired in gangs through a "boss Chinaman" or contractor. For $1.00 a day, Chinese workers boarded themselves. Their usual sleeping accomodations were "a little crib" and their customary cooking equipment "a little place" where they could dig a hole, build a fire, and put on a big pan that served both as cooking pot and communal serving dish.[41]

Witnesses defended the Chinese on the ground that the fruit and vegetable crops of the State could not be harvested without them. Some maintained that even cheaper labor was a necessity.[42] According to one large grower, "... the Chinese should be allowed to come until you get enough here to reduce the price of labor to such a point as that its cheapness will stop their coming." The Chinese were described as "these mud-sills ... at the bottom of our success ...."

The treatment of farm labor as servile and a thing apart from the operating farmer was not restricted to the Chinese.[43] White workers were not infrequently labeled "bummers." When a San Mateo farmer was asked whether he objected to hired white boys and girls eating at his family table, he replied: "... these eastern gentlemen must remember there is somewhat different here from what it is in the East. A farm-hand will come along looking for a day's or a month's work; you do not know who he is, and you do not want to bring him into your family. You generally have beds up-stairs in the granary and they furnish their own blankets. We generally have mattresses for them, with straw, and let them furnish their own beds."

With the restriction of Chinese immigration by congressional legislation in 1882, there was agitation in California to provide better living quarters and longer employment for labor so that desirable white immigrants would be attracted to the state. The State Agricultural Society was told that "our nomadic herds of farm hands must have all the year employment and an abiding place with their work; they must be fed and housed as civilized men should be fed and housed; they must be encouraged to save their earnings; the wide gap between the employed and the employer must be closed. ..."[44] One spokesman who urged the establishment of model villages declared: "The proprietors of large estates have been content to herd their workmen as they would their cattle. Isolated planters have depended upon contract labor. All these conditions must soon change. ..."[45]

But the conditions did not change. Chinese were still numerous and easily available throughout the eighties. By 1889 California industries were in a period of depression that extended through the nineties, making a great supply of cheap white labor available for the harvests.[46] By the mid-nineties, "another pest in the shape of cheap labor" was making a place for itself in the hop, beet, and fruit lands.[47] The Japanese, like the Chinese, worked in organized gangs with one of their own number as boss or spokesman. In some instances, this system developed into the double exploitation of worker, by employer and "boss," as commonly has happened under all contract systems for field labor. On the other hand, the Japanese "boss" frequently acted as an effective agent for collective bargaining in the interest of his fellows. During the depression nineties Japanese gang labor was generally cheap and docile, but shortly thereafter the Japanese were using walkouts, or threats of them, to force higher pay from growers when the harvest was underway. Employers lamented the passing of the more tractable Chinese, but many preferred either of the Asiatic peoples to white workers. A Pajaro Valley fruit grower in 1902 discouraged efforts to attract laborers from the eastern States. "Now, to come to the point. Of course you understand that a certain class of labor has been degraded by the Chinese to a certain extent, and to-day white labor will not perform it. If you get white laborers from the East they may work

[40] In 1886 it was estimated that seven-eighths of the labor in vineyards and orchards was Chinese. California Bureau of Labor Statistics, *Biennial Report*, 1885–1886, 46.

[41] 44 Congress, 2 session, *Senate Report 689* (serial 1734, Washington, 1877), 437, 443, 570, 579–580, 591, 1094.

[42] *Ibid.*, 40, 75, 458, 561, 570, 750, 751, 781, 786, 1027.

[43] *Ibid.*, 307, 781, 905, 1033–1034.

[44] California State Agricultural Society, *Transactions*, 1886, 201.

[45] California Chief Executive Viticultural Officer, *Annual Report*, 1882–84, 28.

[46] Fuller, "The Supply of Agricultural Labor ... in California," 297.

[47] California Bureau of Labor Statistics, *Biennial Report*, 1895–1896, 102; Jamieson, *Labor Unionism*, 50–54.

part of the season, but will finally take the course that all white labor does—they will want to boss the job."[48]

The white laborer from the East was apt to be equally enthusiastic about the prospect of working for the California growers. A farmer recently arrived from Minnesota told of a young hired man who had left for California and soon returned with the report that he had "not been treated much better than a dog by his employers in California."[49]

The impersonal profit-dominated relationships between employer and employee in California agriculture brought only a few sporadic small-scale strikes before the close of the century. White workers developed no organized opposition to grower interests comparable to that of the Japanese. Yet by 1902 there were a number of ineffective local unions, and the American Federation of Labor in its national convention of that year voted to place an organizer among the agricultural workers in California.[50] It is interesting to note how long ago a need for unionism in agriculture was officially recognized, especially in view of the long subsequent record of neglect and failure.

The expansion of fruits and vegetables was the most readily recognizable development in post-Civil War American agriculture that nurtured a type of farm labor distinct from the hired man. But by far the most extensive areas of high labor costs revealed by the wage map of 1899 were in the cattle country. The cowboy, whose services necessitated those expenditures, was in fact just another variant among those who labored for wages in American agriculture. His kinship to others at work on the land and to all wage earners has not generally been recognized. Romance set him apart; and the very business of cattle raising with its swift growth to the stature of a large-scale industry has been accepted as something distinct from the agriculture of the country, an agriculture very generally identified with the family farms of the Midwest. Yet the large plantations of the South, the truck gardens of the East, the bonanza farms of the Dakotas, and the agricultural enterprises of California have also differed from the accepted norm.

When the cowboy has been classed with agricultural labor, he has been distinguished as the "aristocrat of all wage earners"; and his scorn for the hired man has been proverbial.[51] Only a few studies throw light upon the cow hand as wage earner and his relations with the men who hired him. Certain facts are suggestive. The cowboy often worked with an outfit whose monthly wage bill ran from $500 to $1,000, or even to $8,000. Unless he were a trail driver or a foreman, his usual wage was $25 or $30 a month. From one-half to three-fourths of these men could expect to find employment for only eight months of the year.[52] Resentment against employer occasionally found written expression,[53] but more often it took the form of discourteous treatment of a visiting absentee owner or the theft of cattle. Among rustlers it was a point of honor never to touch the cattle of a poor man or of a small owner. Cattlemen's associations took stringent measures to control theft, including an extensive and rigidly enforced black list of suspected cow hands. In some instances cattlemen denied employment to any hand known to own cattle of his own.[54]

The intimations of employer-employee antagonism are confirmed by a recent study which has uncovered a strike of approximately 325 cowboys employed on seven large Texas ranches in 1883. To force an increase in wages, they quit work before the spring roundup and stayed out until their money was exhausted. Texas rangers as well as economic necessity came to the support of employer interests, but the cow hands gained some wage increases. The strikers were motivated not

[48] California State Board of Horticulture, *Biennial Report*, 1901–1902, 274.

[49] *Ibid.*, 281.

[50] Jamieson, *Labor Unionism*, 48, 50, 53, 56.

[51] J. Frank Dobie, *A Vaquero of the Brush Country* (Dallas, 1929), xi–xii.

[52] Robert M. Barker, "The Economics of Cattle-Ranching in the Southwest," *American Monthly Review of Reviews*, 24:312 (Sept. 1901); Edward Everett Dale, *The Range Cattle Industry* (Norman, Okla., 1930), 64–65, 128; Louis Pelzer, *The Cattlemen's Frontier* (Glendale, Calif., 1936), 166; J. Orin Oliphant, "The Cattle Herds and Ranches of the Oregon Country, 1860–1890," *Agricultural History*, 21: 229–230 (Oct. 1947).

[53] Dobie, *A Vaquero of the Brush Country*, 91.

[54] Ernest Staples Osgood, *The Day of the Cattleman* (Minneapolis, 1929), 104, 148, 150; Robert S. Fletcher, *Organization of the Range Cattle Business in Eastern Montana* (Montana Agricultural Experiment Station, *Bulletin 265*, Bozeman, 1932), 20–22, 39; Clara M. Love, "History of the Cattle Industry in the Southwest," *Southwestern Historical Quarterly*, 20:11–12 (July 1916); Owen Wister, "The Evolution of the Cow-Puncher," *Harper's Magazine*, 91:616 (Sept. 1895).

only by wage consciousness but also by resentment of the impersonal treatment and the loss of status and of opportunity to become independent ranchers which accompanied the expansion of absentee corporate ownership.[55]

In the days of the open range, the economies of large-scale operation tended to squeeze out the small rancher.[56] There had been a chance in the very early days of the industry for the enterprising cowboy to brand on shares, acquire stock of his own, pasture them on the public lands and himself become a large operator.[57] A number of cow hands continued to own a few head of cattle, but as a group they were not on their way up the economic ladder. Even the limited opportunity for small owners was further circumscribed by the advent of barbed-wire enclosures and the exclusion of small cowboy owners from the annual spring roundup upon the insistence of the large ranch companies.[58] On the other hand, the benevolence of individual employers staked a few hands to small ranches during the late eighties when the cattle industry tended to break up into smaller units under the impact of reverses.[59] But the smaller enclosed ranches represented more capital than the average cow hand was apt to be able to command; land had to be acquired, fences built, and wells sunk in arid regions at great cost.[60]

The literature of the cowboy suggests that more times than not he readily accepted his status of wage earner and harbored few ambitions. The cowboy was a notoriously easy spender. His pay check vanished quickly during his occasional splurges in town and disappeared almost as soon on horses, spurs, saddles, and sombreros. His pride centered in his prowess in the saddle.[61]

With the shift from the open range to the enclosed ranch, the wage-earner aspect of the cowboy became more and more apparent. Much of his labor consisted of the routine duties necessary for the cultivation of a feed farm. The famous Spur ranch in northwestern Texas employed an average of forty men a month from 1885 to 1908; but significantly its records held no mention of the "cowboy," only of the "hands."[62]

Sheep as well as cattle were raised on the western grazing lands that figure so prominently on the wage map of 1899. Since 1860 their numbers in the Western States and Territories had increased ten fold, from less than 10 percent of the Nation's flocks to more than half. In expanding westward sheep raising, like cattle raising, took on the character of a specialized commercial enterprise.[63] An average sheep ranch with its flock of 5,000 woolies represented an investment of about $15,000.[64] The "sheep baron" might have a herd that was ten, or even twenty, times as large and might employ as many as 75 regular men plus twice that number at shearing time.[65] Yet, as compared to the cattle industry, there was a secure place for the small operator;[66] and the humble herder, unless he were

[55] Ruth Allen, *Chapters in the History of Organized Labor in Texas* (University of Texas *Publication 4143*, Austin, 1941), 33–41.

[56] Reginald Aldridge, *Life on a Ranch* (New York, 1884), 215–218; Letter to editor, *Nation*, 41:237 (Sept. 17, 1885); H. M. Taylor, "Importance of the Range Industry," U. S. Bureau of Animal Industry, *Annual Report*, 1885, 324; Dale, *The Range Cattle Industry*, 62, 74.

[57] Dale, *The Range Cattle Industry*, 23–24; Shannon, *The Farmer's Last Frontier*, 222.

[58] Allen, *Chapters in the History of Organized Labor in Texas*, 35–36, 38.

[59] Philip Ashton Rollins, *The Cowboy* (New York, 1936), 34.

[60] Dale, *The Range Cattle Industry*, 122; Douglas Branch, *The Cowboy and His Interpreters* (New York, 1926), 157; Barker, "The Economics of Cattle-Ranching in the Southwest," 313; Letter to editor, "The Cattle Business," *Nation*, 41:173 (Aug. 27, 1885); Pelzer, *The Cattlemen's Frontier*, 159, 163.

[61] Branch, *The Cowboy and His Interpreters*, 11; Barker, "The Economics of Cattle-Ranching in the Southwest," 313; Everett Dick, "The Long Drive," Kansas State Historical Society, *Collections*, 17:50 (Topeka, 1928); Pelzer, *The Cattlemen's Frontier*, 246; Paul I. Wellman, *The Trampling Herd* (New York, 1939), 235.

[62] William C. Holden, *The Spur Ranch* (Boston, 1934), 90–106.

[63] U. S. Census Office, 12th Census, 1900, *Census Reports*, 5:ccvi, ccxiv. In the western division, all but about 4 percent of the sheep were raised on livestock ranches whereas in the States to the east a third were on farms not specializing in livestock.

[64] Harold E. Briggs, "The Early Development of Sheep Ranching in the Northwest," *Agricultural History*, 11:174 (July 1937); Carl C. Rister, *The Southwestern Frontier, 1865–1881* (Cleveland, 1928), 284; Rupert N. Richardson and Carl C. Rister, *The Greater Southwest* (Glendale, Calif., 1934), 376–377.

[65] Richardson and Rister, *The Greater Southwest*, 371, 373–375; Charles W. Towne and Edward N. Wentworth, *Shepherd's Empire* (Norman, Okla., 1945), 305–333.

[66] Briggs, "The Early Development of Sheep Ranch-

Mexican, had a fair chance of becoming a sheep owner, despite his wage of $10 or $15 monthly.[67] Even as late as 1900, large numbers of sheep were grazed on the public domain, eliminating the necessity for a large land investment;[68] and one herder could tend a flock of from 1,250 to 4,000.[69]

The shepherd was an isolated figure, but the sheep shearers worked in bands. They constituted a skilled group of seasonal workers who migrated regularly over vast stretches of the Rocky Mountain country from New Mexico to Canada. By the 1880s shearing was the regular occupation of many an itinerant worker. In the early years of the industry, the shearers were largely Mexicans, but many nationalities established themselves in the strenuous but well-paid trade.[70] Essential to the sheep man, equipped with a skill that set them apart particularly in the days before machine shearing, and working together as a cohesive group, shearers were more likely material for organization than the herders of the sheep or most casual workers. As early as the 1890s they organized a number of local unions. From these beginnings developed the first stable union movement among the Nation's agricultural workers, the Sheep Shearers Union of North America.[71]

The great wheat fields of North Dakota, eastern Washington, and eastern Oregon, as indicated on the wage map of 1899, provided yet another variant from the American family farm with its hired man. The wheat production of the Red River Valley aroused much contemporary comment, and has received considerable study.[72] The bonanza farms of that area had their beginning in 1875 when an able Minnesota wheat grower, Oliver Dalrymple, contracted to establish and manage the production of wheat on a vast block of land that had been acquired at low cost by former bondholders of the Northern Pacific Railroad. The topography of the country lent itself to large-scale farming with the use of the latest mechanical equipment, such as the gang plow, the broadcast seeder, the Marsh harvester with binder attached, and the steam engine and separator for threshing.

The big farms made money even when the small farmers were taking losses.[73] According to the report of a Senate committee in 1894, "On these immense plantations farming is conducted with as much business tact and attention as a great manufacturing establishment or railway corporation."[74] The expansion of the bonanza farms continued through the eighties; by the early nineties the outlook was no longer so bright. Droughts, the fall in wheat prices, and the financial panic of 1893 combined to diminish their huge profits. The price of land, however, continued to climb as undeveloped agricultural lands grew scarce, and holders of great tracts found it profitable to sell land.[75]

Small armies of single or foot-loose men performed the labor of the great farms. Indeed, except for a ready supply of transient labor the establishments could never have been operated with success. On one 20,000-acre tract a crew of 350

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ing . . .," 162, 166, 174; Towne and Wentworth, *Shepherd's Empire*, 134–135. Profits in the industry were high.

[67] Towne and Wentworth, *Shepherd's Empire*, 175, 273–274; Richardson and Rister, *The Greater Southwest*, 375.

[68] U. S. Census Office, 12th Census, 1900, *Census Reports*, 5:ccv.

[69] Towne and Wentworth, *Shepherd's Empire*, 275.

[70] *Ibid.*, 135, 296, 298–300; Briggs, "The Early Development of Sheep Ranching . . . ," 171; Richardson and Rister, *The Greater Southwest*, 375.

[71] Jamieson, *Labor Unionism*, 9, 221–222, 225.

[72] The best secondary accounts are Harold E. Briggs, "Early Bonanza Farming in the Red River Valley of the North," *Agricultural History*, 6:26–37 (Jan. 1932); and John Lee Coulter, "Industrial History of the Valley of the Red River of the North," North Dakota State Historical Society, *Collections*, 3:529–672 (Bismarck, 1910). The most important contemporary accounts are William Godwin Moody, *Land and Labor in the United States* (New York, 1883), and his "The Bonanza Farms of the West" *Atlantic Monthly*, 45:33–36 (Jan. 1880); and William Allen White, "The Business of a Wheat Farm," *Scribner's Monthly*, 22: 531–548 (Nov. 1887). See also U. S. Department of Agriculture, *Report*, 1873, 278, and for a recent summary, Shannon, *The Farmer's Last Frontier*, 154–161.

[73] 46 Congress, 2 session, *House Miscellaneous Document 5* (serial 1928, 1879), 21.

[74] W. A. Peffer, *Agricultural Depression; Causes and Remedies . . . Report . . . to the Senate Committee on Agriculture and Forestry . . .* (53 Congress, 3 session, *Senate Report 787*, serial 3288, Washington, 1894), 5.

[75] U. S. Industrial Commission, *Report*, 10:851. Cf. Shannon, *The Farmer's Last Frontier*, 160. Although the peak prosperity of bonanza farming was reached by 1890, a sampling of Red River counties indicates that large farms increased in number between 1890 and 1900 and that the average size of farms likewise increased both in that decade and in the succeeding one. There was a marked expansion of tenancy.

to 400 men were employed in harvesting and an even greater number in threshing.[76] These men were drawn from the lumbering regions of Minnesota and Wisconsin, the cities of Saint Louis, Omaha, Saint Paul, Chicago, and Milwaukee, and the homesteads and poorer farms of the region.[77] The railroads, which reached this territory in the eighties, facilitated their arrival. The big farms were said to "ship their men in and ship them out" just as they shipped in their supplies and shipped out their wheat.[78]

To the permanent residents of the Dakotas these men were "hoboes," "tramps," "bums," or individuals who had "outrun the sheriff."[79] Local authorities were urged to take precautions against trouble and to provide additional police protection against the "tramp nuisance."[80] On the other hand, a shrewd observer of the American scene, William Allen White, declared them to be "steady, industrious men with no bad habits, and small ambitions."[81] The methods of the bonanza farms were thought by one Dakota farmer to eliminate "all the individuality and independence of these men" and to prevent their having little homes of their own. In his words, "It unAmericanizes them. . . ."[82]

Many of the men who worked on the bonanza farms had followed the wheat harvest north from Oklahoma.[83] They were part of an important and regular migratory movement of labor which characterized the entire western wheat country of the Great Plains until tractors and combines replaced them in the 1920s.[84] Perhaps the movement began as early as the seventies;[85] it was well established by the eighties. The role of the migratory harvest hands in American agriculture was widely recognized by the turn of the century, when they were described as "a peculiar product of the great wheat-raising districts, moving in crowds from south to north as the grain ripens, and returning to the cities for such casual employment as may be had in winter, or to hibernate, or bed, or go as vagrants to workhouses."[86] In the Pacific States these transient laborers were also known. An abundance of labor was reported in southeastern Washington in 1892 because "crops south of us ripen and are harvested first, so that we get hands from that direction when the harvest is over there."[87]

This survey of the characteristics of farm-labor employment in the areas of high-wage expenditures revealed by the wage maps of 1869 and 1899 has established the fact that many variants from the hired-man pattern had been established or greatly expanded on the American land during the thirty-five years before the opening of the twentieth century.[88] It also suggests that these diverse patterns gave rise to most of the problems and attitudes of which the general public has been aware only since the 1930s. And further examination substantiates this conclusion.

[76] Peffer, *Agricultural Depression*, 26–27; Briggs, "Early Bonanza Farming . . . ," 33; Coulter, "Industrial History . . . ," 577.

[77] Letter in *Cultivator and Country Gentleman*, 47:46 (Jan. 19, 1882); White, "The Business of a Wheat Farm," 543; Coulter, "Industrial History . . . ," 578, 590; Briggs, "Early Bonanza Farming . . . ," 34.

[78] U. S. Industrial Commission, *Report*, 10:846, 850; *Wages of Farm Labor* (1892), 51.

[79] Letter to the editors in *Cultivator and Country Gentleman*, 47:46 (Jan. 19, 1882).

[80] Briggs, "Early Bonanza Farming . . . ," 34.

[81] White, "The Business of a Wheat Farm," 543.

[82] U. S. Industrial Commission, *Report*, 10:934.

[83] White, "The Business of a Wheat Farm," 543.

[84] The best study of migratory harvest labor is D. D. Lescohier, *Harvest Labor Problems in the Wheat Belt* (U. S. Department of Agriculture, *Bulletin 1020*, 1922). See also Paul S. Taylor, "Migratory Farm Labor in the United States," U. S. Bureau of Labor Statistics, *Monthly Labor Review*, 44:538–539 (March 1937). A conservative estimate of the number of men from outside Kansas needed for its harvest in 1920 was 20,000; in 1919, an exceptional year, the number was nearer 100,000. Kansas Board of Agriculture, *Biennial Report*, 1919–1920, 205.

[85] Everett Dick, *The Sod-House Frontier, 1854–1890* (New York, 1937), 291.

[86] U. S. Industrial Commission, *Report*, 11:81; *Wages of Farm Labor* (1892), 7.

[87] *Wages of Farm Labor* (1892), 53.

[88] Since the wage maps are based upon an average for the total number of farms, they do not reveal all areas where atypical farm labor was important. For example, the map for 1899 does not show the most important potato-raising county (Aroostook, Maine), the county with most acres in onions (Hardin, Ohio), the leading strawberry areas (Sussex, Del.; Anne Arundel, Md.; Berrien, Mich.), the important cranberry county of Barnstable, Mass., nor the chief Florida orange county (Orange). Although a majority of the 25 counties producing in excess of $400,000 worth of miscellaneous vegetables are indicated on the map, a considerable percentage of them are missing. U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:283, 288, 293, 608–610, 612, 708.

There was the migrant. The harvest hands, the sheep shearers, the California "bindle stiff," and his Asiatic competitors were the most conspicuous migratory laborers of the period, but there were others. Transient labor was important in the Atlantic-coast fruit, berry, and truck districts.[89] Some of these laborers were recruited directly from urban centers,[90] but others followed regular routes of travel. Each summer Negro workers from Virginia and Maryland, with recruits from North Carolina, moved northward into southeastern Pennsylvania, New Jersey, southeastern New York, across Connecticut, and into Rhode Island.[91] This Negro migratory labor was of importance in New Jersey at least as early as 1889.[92] In 1900, it was estimated that from 2,000 to 4,000 such laborers came into the State each year.[93] Itinerant strawberry pickers probably were already following the harvest up the Mississippi Valley.[94] Even the old-fashioned general farms of Vermont made use of migratory laborers; they were the habitants of Quebec and other French Canadians from Nova Scotia who came south to help in the harvests. "The summer over, they return with almost the only money they ever see, and which is too often all exhausted before they reach home."[95] From the Saint Johns River region their countrymen came to dig the potatoes of Aroostook County, Maine. Farther west, other Canadians crossed the border to aid in the North Dakota harvests.[96] From Kentucky, American migrants moved north across the Ohio River to work in the truck and fruit farms of southern Illinois.[97] Farther south, in Louisiana, Italian workers from the central and northern States, and even from Italy, arrived in numbers to cut the sugar cane.[98] There was also another less regular type of migratory laborer who had proved useful in American agriculture. He was the penurious homesteader or small frontier farmer who turned eastward at harvest time to obtain some cash income in the more settled regions.[99]

Women and children were at work on the American land. To be certain, the day of family labor in California agriculture had not yet arrived; at the turn of the century single men predominated in the migratory labor force.[100] In the South, however, the labor of Negro women and children was taken for granted, even as it had been in pre-Civil War days, despite the fact that freedmen in the first years of their freedom tried to keep their women from the fields.[101] Wherever there were berries, fruit, or vegetables to be gathered, women and children were employed.[102] By 1900 flat cars and steamboats carried thousands of women and children from Chicago and Detroit to the berry fields.[103] A few years later, a special report of the United States Department of Agriculture extolled the beneficial effects upon the health and

[89] *Wages of Farm Labor* (1892), 7; U. S. Industrial Commission, *Report*, 11:87, 91.

[90] In other regions also, including Illinois, Michigan, Missouri, and Colorado, cities were utilized as a source of agricultural labor. *Wages of Farm Labor* (1892), 21–22, 43, 52; U. S. Industrial Commission, *Report*, 10:533; U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:307.

[91] James H. Blodgett, *Wages of Farm Labor in the United States: Results of Twelve Statistical Investigations, 1866–1902* (U. S. Department of Agriculture, Bureau of Statistics, *Bulletin, misc. s., 26*, 1903), 33; U. S. Industrial Commission, *Report*, 10:320, 11:90–91.

[92] New Jersey Board of Agriculture, *Annual Report*, 1889–90, 491.

[93] U. S. Industrial Commission, *Report*, 10:133–134.

[94] S. W. Fletcher, *The Strawberry in North America* (New York, 1917), 73–74, and *Strawberry-Growing* (New York, 1917), 164; Harry Schwartz, *Seasonal Farm Labor in the United States* (New York, 1945), 51.

[95] F. G. Mather, "On the Boundary Line," *Harper's Magazine*, 49:337 (Aug. 1874); Wilson, *The Hill Country of Northern New England*, 161–162; U. S. Industrial Commission, *Report*, 10:402.

[96] U. S. Industrial Commission, *Report*, 11:80, 788–789.

[97] Blodgett, *Wages of Farm Labor . . .*, 33.

[98] *Wages of Farm Labor* (1892), 34; U. S. Industrial Commission, *Report*, 15:503.

[99] *Wages of Farm Labor* (1892), 48, 50.

[100] Family labor became general in California with the coming of the Mexicans in great numbers during the World War. However, even in the 1880s women and children were in demand in the hopyards, vineyards, and berry fields. California Bureau of Labor Statistics, *Biennial Report*, 1883–1884, 10.

[101] The U. S. Industrial Commission found evidence that in the South children as young as 6 years of age picked cotton and boys of 10 became plowmen. "This child labor on farms is not confined to negro children." *Report*, 10:xx.

[102] See footnotes 17, 20, 21, 22, and 100 above; U. S. Industrial Commission, *Report*, 15:524 (N. Y.), 526 (N. J.), 554 (Del.). For the use of children in the tobacco harvest of the Connecticut Valley, see Ramsey, *The History of Tobacco Production in the Connecticut Valley*, 173–174.

[103] U. S. Census Office, 12th Census, 1900, *Census Reports*, 6:307.

habits of city children of work in nearby beet districts.[104]

Apparently there was more labor of women and children on the general farms of the Mississippi Valley in those years than in recent times. This work was more apt to be on the home farm than for wages elsewhere. The Iowa Bureau of Labor Statistics in 1891 estimated that 40 percent of the farm children from 8 to 16 years of age were kept from school to do farm labor, thereby losing an average of 54 days of schooling each year.[105] The Missouri commissioner of labor statistics in 1880 published returns showing that women and children were at work in the fields throughout the State. He commented: "it would scarcely be supposed in the absence of facts that so large a proportion, nearly one-fourth of farmers' wives are employed in field labor." Although some parents required only chores of their children, "many others, it must be confessed, compel their children to perform the labor of an adult." The schooling available to Missouri farm children averaged 4 to 5 months in the year; but as a result of the work that the children had to do in good weather and the difficulties of transportation in bad weather, the average length of attendance was only 2 or 3 months.[106]

Although the foreign-born constituted a negligible percentage of all farm workers throughout the country,[107] in a number of localities their cheap labor was of utmost importance in the cultivation and harvesting of the crops.[108] Now and then, in the years when labor was scarce, farmers consciously promoted the coming of foreign laborers. The withdrawal of farm labor during the Civil War prompted the legislature of Wisconsin to memorialize Congress to encourage emigration to the United States. "The wages of those whom the agriculturist must employ, or lose his crop, have increased more than a hundred per cent., and the consequent tax upon the net receipts . . . has brought down the profits of the farmer to a minimum beyond which he cannot afford to have them reduced."[109] The American Emigrant Company in 1865 was busily engaged in importing young men of 17 to 21 for farm laborers and wished Congress to make enforceable in the courts the contracts entered into with these minors.[110]

The movement in the early 1870s to import Chinese laborers for agriculture was sponsored by southern plantation owners,[111] but it received endorsements from farmers in the North Atlantic States.[112] In 1873 Pennsylvania farmers were securing Swedish immigrant laborers by an advance of $50 or $60 paid to an association in Wilmington, Delaware, but subtracted from the $10 to $12 a month wages of the workers.[113] About the same time, families from England and Ireland were encouraged to come to Ohio and New York by advance payment of their passage, and one farm journal reported that agricultural associations might soon be able to take part in

[104] U. S. Department of Agriculture, *Progress of the Beet-Sugar Industry in the United States in 1905* (*Report 82*, 1906), 11–13. By 1900 the beet-sugar industry was well established in California, Nebraska, Utah, and Michigan; and factories elsewhere marked its beginning in a number of other States including Colorado. Except in California where production began in the 1870s, beet sugar was largely a development of the 1890s.

[105] Iowa Bureau of Labor Statistics, *Biennial Report*, 1890–1891, 50. The estimate of 42 local and county farm alliances was 46 percent of the children employed and 60 days of school lost. *Ibid.*, 54.

[106] Missouri Bureau of Labor Statistics, *Annual Report*, 1880, 274–275.

[107] In 1890 the foreign born were 9.0 percent of all farm laborers; in 1900 they were 7.1 percent. Cf. Shannon, *The Farmer's Last Frontier*, 361–362.

[108] See footnotes 18 and 19 above.

[109] 38 Congress, 1 session, *Senate Miscellaneous Document 106* (serial 1177, 1864), 1.

[110] 38 Congress, 2 session, *Senate Miscellaneous Document 13* (serial 1210, 1865), 5. Congress authorized contract labor in 1864.

[111] For the movement to import Chinese coolies to replace Negroes on the southern plantations, see Bert James Loewenberg, "Efforts of the South to Encourage Immigration, 1865–1900," *South Atlantic Quarterly*, 33:363–385 (Oct. 1934); and Roger W. Shugg, *Origins of Class Struggle in Louisiana* (University, La., 1939), 254–255.

[112] Massachusetts Bureau of Labor Statistics, *Annual Report*, 1870–71, 157. See also the arguments for Chinese labor in the U. S. Department of Agriculture, *Report*, 1870, 572–576. In 1901 and 1902 the desirability of Chinese labor and of the discontinuance of restrictive legislation was upheld in the discussions of the meeting of the New Jersey Board of Agriculture. *Report*, 1901, 33; *ibid.*, 1902, 350. For the Chinese in California agriculture, see footnotes 40–42 above.

[113] U. S. Department of Agriculture, *Monthly Reports*, 1873, 92. In 1869 the average wage in Pennsylvania for farm labor employed by the year with board was $18.05. *Ibid.*, 1870, 7.

"an organized plan for the introduction of skilled farm labor from England."[114] The supply of home labor after the depression struck in the mid-1870s made importation of foreign workers unnecessary and uneconomical.

Upon farm workers who varied from the hired-man norm, there was bestowed an opprobrium that did not offend the sensitivities of the Nation until several decades later. The disparaging terms of "tramp," "bum," "riffraff," and "undesirable labor" were applied to farm workers not only in the wheat belt and on the Pacific coast, but in most any locality where they were unemployed, or where they had taken to the road in search of jobs, or where they constituted a racial group distinct from that of the employing farmers.[115] Their low social status reflected both economic changes and community prejudice. Even J. R. Dodge of the United States Department of Agriculture, the one man during this period who could be considered a government expert in the field of farm labor, cast a stigma upon these workers. At the turn of the century he contrasted the hired man with "a class less efficient and desirable, with inferior training in rural occupations, whose rate of compensation is less, and whose condition, from lack of economy and judgment more than deficiencies of compensation, is not so good, and whose lives and aims are not on so high a plane." There was no mistaking the workers to whom he referred when he said: "The annual inundation of grain fields in harvest time, hop yards in picking season, fruit picking in districts of extensive market orchards, and similar harvest seasons requiring large numbers of hands for a short time, has a demoralizing effect on farm labor, reducing its efficiency in those lines. Such employments demand little skill; the requirements of each are simple and easily satisfied. They constitute a low order of farm labor, if worthy to be classed with it at all, and are excrescences upon its fair face."[116]

Impersonal employer-employee relationships and an antagonism of economic interest accompanied the loss of status for increasing numbers of farm workers. As yet there was not much in the nature of organized activity by either laborers or farmers in defense of their pecuniary interest; but there were intimations of such developments. Evidence has been noted of some strikes and union organization during the period. In the opposite camp, there already existed convenient vehicles for implementing concerted labor policies in the associations organized among cattlemen, fruit growers, and sugar planters. There is some indication that community pressure was exercised against farmers who offered more than the going wage.[117]

Although there is reason to suspect that the growing impersonality of employment had some effect upon the position of the American-born hired man, other types of farm workers were the focus of the new problems and attitudes. However, the hired man shared with all farm wage earners certain disadvantages—the constriction of opportunity for attaining farm ownership,[118] low wages, and the hazards of unemployment. These disadvantages affected his standing in society. Though related to the problems facing American farm operators during these years, they tended to undermine the hired man's apprentice status. It is significant that at the turn of the century the United States Industrial Commission recognized farm labor as a group with interests distinct from those of farmers generally.

Sponsors of the Industrial Commission evinced no special interest in agricultural labor, but when topics were formulated to guide the inquiry, an entire section was devoted to the conditions and wages of farm labor. The conclusions and recom-

[114] *Ibid.*, 1873, 93; *Cultivator and Country Gentleman*, 37:132 (Feb. 29, 1872); *American Agriculturist*, 32:366 (Oct. 1873). A law against contract labor was passed in 1885, and additional legislation in 1887 and 1891 strengthened its provisions.

[115] Massachusetts Board of Agriculture, *Annual Report*, 1884, 103; Missouri Bureau of Labor Statistics, *Annual Report*, 1880, 259–265; U. S. Department of Agriculture, Bureau of Statistics, *Wages of Farm Labor* (*Report*, n.s., 18, 1885), 26, and *Wages of Farm Labor* (1892), 48; U. S. Industrial Commission, *Report*, 11:90, 101. An important figure in the public life of Tennessee complained that "our young Negro men are becoming tramps, and moving about over the country in gangs to get the most remunerative work." *Ibid.*, 95.

[116] U. S. Industrial Commission, *Report*, 11:79–80.

[117] *American Agriculturist*, 49:218 (April 1890); *Cultivator and Country Gentleman*, 43:723, 803–804 (Nov. 14, Dec. 19, 1878), 44:20, 51–52 (Jan. 8, 23, 1879).

[118] For fuller treatment, see LaWanda F. Cox, "Tenancy in the United States, 1865–1900; A Consideration of the Validity of the Agricultural Ladder Hypothesis," *Agricultural History*, 18:97–105 (July 1944).

mendations of the commission in this section of its report showed little discernment and marked complacency. The testimony taken might have suggested less optimism despite the failure to give farm workers themselves a day in court. The Assistant Secretary of Agriculture, a man of long-standing prominence in grange activities, was questioned about the opportunity for ambitious young men to become farm owners. "A great many of them do;" he replied, "the industrious, saving men do. . . . A good many men who are good workers do not save money; they spend it as fast as they get it. . . . There are a great many men who start in on the farm and are good workers and continue as farm hands all their life."[119] Eugene Davenport, dean of the College of Agriculture of the University of Illinois, testified that twenty-five years earlier a man worked upon the farm to get money enough to buy land for himself but that now "there seems to be a decided tendency for the farm laborer, if he is unmarried, to work for money without a very definite object, and this money is likely used for whatever his fancy dictates, most likely for a horse and buggy of his own." The trouble was that the farm laborer's wages, though higher than a generation earlier, would not buy so much land. "It can not secure the opportunity for a man that it could 25 years ago."[120]

Whether or not a farm laborer could advance to the position of farm owner had been a question of discussion and controversy for some years before the Industrial Commission opened its inquiry. In 1891 Ohio farm hands were told that, although they considered their monthly wages inadequate, they still could save enough to get a start in the world.[121] A woman farmer of Iowa in 1898 denied the assertion she heard made by young and old that "no man can start out penniless and become possessor of 160 acres of $50 land." She attributed the lack of advancement on the part of farm hands to their extravagant spending.[122]

[119] U. S. Industrial Commission, *Report*, 10:7.

[120] *Ibid.*, 256–257. A prominent Minnesota farmer maintained that it was almost impossible for a young man to go in debt for a farm home at current prices. "If he does so, it is almost impossible for him within his natural life to become a free man; that is get out of debt and own a farm." *Ibid.*, 710.

[121] Ohio Board of Agriculture, *Annual Report*, 1891, 399.

[122] Iowa State Agricultural Society, *Annual Report*, 1898, 407–408. See also *ibid.*, 1896, 505–507; New York Bureau of Labor Statistics, *Annual Report*, 1897, 646.

There could be no controversy over the fact that farm laborers in ever greater numbers were turning to the cities in search of opportunity. Throughout the eighties and the early nineties there was constant complaint that those who had formerly worked for hire upon the farms were leaving to seek jobs in industry.[123] The movement to the cities continued even in the depression years of the nineties. Of more than 500 Wisconsin farmers who were asked in 1895 whether the tendency among unmarried farm laborers was to acquire a farm or to go live in the city, 75 percent answered that farm laborers desired to go to the city, 20.6 percent indicated that laborers desired to stay on on the farms, and 4.4 percent replied that both tendencies were evident. A number of farmers distinguished between foreign laborers, who tended to stay on the farm, and Americans, who preferred the city. One return bore the comment, "Never can save enough to buy a farm."[124]

The preference for city employment was in part a reflection of the discrepancy between industrial and farm wages. Statistical data on wages in this period is not complete nor precisely comparable, but it is sufficient to indicate general levels and trends. To be certain, the value of perquisites to farm workers, a perennial matter for dispute, cannot be definitely determined. Yet it is safe to assert that farm labor was the lowest paid major type of American labor. For the country as a whole, the average monthly wage with board in 1899 was $13.90, without board it was $19.97; for the North Central States, the region of the hired man, the comparable rates were $17.36 and $24.75. And in 1899 wages were higher than they had been for most of the years since 1866.[125]

Available statistics indicate that the trend of farm wages, as well as the amount, compared unfavorably with wages in industry. The wage trend has often been presented as more advantageous to farm labor than was actually the case for the simple reason that the 1912 report of the

[123] *Wages of Farm Labor* (1885), 26, 27; U. S. Department of Agriculture, Division of Statistics, *Report of the Statistician*, n.s., *Report 51* (1888), 183; and *ibid.*, n.s., *Report 73* (1890), 200, 207.

[124] Wisconsin Bureau of Labor and Industrial Statistics, *Biennial Report*, 1895–1896, 67–85, 108.

[125] George K. Holmes, a statistician of the Department of Agriculture, said: "This is the lowest-paid labor of all the great occupation groups in this country, and the income would hardly seem sufficient to provide subsistence for a family." U. S. Industrial Commission, *Report*, 10:153.

United States Department of Agriculture, which is the most authoritative source for this data, recomputed the actual wages for the years 1866 to 1878 into their equivalent in gold, a practice which has not been followed with nonagricultural wages. Though farm wage rates can be corrected in respect to this distortion, they are available only for irregular time intervals since 1866.[126] However, a continuous yearly record from a much earlier date has been carefully assembled for Vermont.[127]

Money wages of farm labor at the turn of the century were actually less than they had been at the close of the Civil War. During that conflict, farm labor had made very considerable wage gains, an increase roughly estimated at 50 percent.[128] By the end of the 1870s a severe drop in rates had wiped out much of this advance. There was some recovery in the eighties and early nineties, but another dip followed 1893. Higher rates in 1898 and 1899 marked an upward movement of farm wages which was to continue through the years of World War I.[129] Of course, wages in the 1860s and 1870s were paid in currency, and their purchasing power was restricted by the prevailing high prices. Although money wages did not again reach the heights of 1866 until 1902, real wages—that is, wages in terms of purchasing power—did increase because of the general downward trend in prices.

A general comparison of farm and nonfarm wage trends can be made from Table 1 which places in juxtaposition an index of hourly rates for nonagricultural labor with an index of money wages based on various types of farm rates.[130] A comparison of the two indices discloses the fact that farm labor, much more than industrial labor, lost its Civil War gains during the depression years of the 1870s.[131] For a short time in the early 1880s farm labor made wage gains at a more rapid rate than did city labor, but this trend was reversed by 1888. During the depression following the financial crisis of 1893, farm wages dropped much farther than did industrial wages.

TABLE 1

Indices of Farm and Nonfarm Wages

Year	*Farm Wages*	*Nonfarm Wages*
1866	78	61
1869	74	66
1874/5	67	67
1877/9	56	61–60–59
1879/80	59	59–60
1880/1	62	60–62
1881/2	65	62–63
1884/5	65	64
1887/8	66	67
1889/90	66	68–69
1891/2	67	69
1893	67	69
1894	61	67
1895	62	68
1898	65	69
1899	68	70

[126] George K. Holmes, *Wages of Farm Labor: Nineteenth Investigation* . . . (U. S. Department of Agriculture, Bureau of Statistics, *Bulletin 99*, 1912). In the following discussion the wage rates as given in this report are used except that those for 1866, 1869, and 1874/5 are reconverted to currency values. This can be done accurately for State figures but only approximately for national averages.

[127] T. M. Adams, *Prices Paid by Vermont Farmers for Goods and Services and Received by Them for Farm Products, 1790–1940*; *Wages of Vermont Farm Labor, 1780–1940* (Vermont Agricultural Experiment Station, *Bulletin 507*, Burlington, 1944).

[128] U. S. Department of Agriculture, *Monthly Reports*, 1867, 4.

[129] Unlike the national averages, Vermont farm wages showed a continuing increase from 1866 to 1869, a drop in the early 1870s (for which nation-wide figures are not available), and the recovery in the early 1880s became a decline by 1885 (perhaps reflecting a relatively smaller amount of industrial competition for labor). The 1869 high point for Vermont farm wages (both day and month) was not again reached until 1913; although monthly wages with board almost reached the 1866 figure of $24.88 (which was slightly higher than that of 1869) in 1905 at $24.00 and slightly exceeded the 1866 rate by 1910. Adams, *Prices Paid by Vermont Farmers*, 88–89.

[130] The index of farm wages is from the U. S. Bureau of Labor Statistics, *History of Wages in the United States from Colonial Times to 1928* (*Bulletin 604*, 1934), 227, which is based on the Department of Agriculture 1912 farm-wage report. The index figures of this bulletin for 1866, 1869, and 1874/5, based upon wages converted into gold, have been recomputed to represent the approximate actual currency wages paid. The index of nonagricultural labor is from the same source. *Ibid.*, 521. Where the farm wages were gathered in the spring of the year, and are designated as of 2 years, the index number of nonfarm wages for each year is given unless they were identical. The base for the farm-wage index is 1910–1914; for the nonfarm index, 1913.

[131] For similar conclusions, see Wesley C. Mitchell, *Gold, Prices, and Wages under the Greenback Standard* (Berkeley, Calif., 1908), 223.

The same trends are indicated in Table 2 where the index of farm wages is converted into an index of real wages and compared with an index of real wages for nonagricultural labor.[132] Whereas only 1 point separates the two indices of real wages in 1866, there is a 15-point difference by 1879, which narrows to 4 points by 1882 and then again widens to 17 points in 1894.

For the Vermont wage study there has been computed an index of real earnings based upon a cost of living index constructed specifically for the State's farm laborers. This index is consistently higher than the above approximate national index until the year 1898. However, as compared with

TABLE 2

Indices of Real Farm and Nonfarm Wages

Year	*Farm Wages*	*Nonfarm Wages*
1866	50	49
1869	59	66
1874/5	62	75
1877/9	65	80
1879/80	70	81
1880/1	70	76.5
1881/2	73	77
1884/5	80	88
1887/8	84	92
1889/90	83	93
1891/2	88	98.5
1893	88	99
1894	84	101
1895	88	104
1898	94	107
1899	94	104

real wages in industry, it confirms the unfavorable position of farm workers. By 1899 the Vermont index is only 17 points higher than for 1866, as against a 55-point gain for nonfarm labor. Furthermore, the Vermont index shows no substantial gains in the real income of farm labor during the entire period of this study as compared with the wage level of the late 1850s. The early level of real earnings was not again reached until the 1880s and 1890s; and in only 6 of the entire 35 years between 1865 and 1900 was the index number higher than in 1859—in 26 years it was lower, in the other 3 years it was identical.[133]

Many factors affected the rate of farm pay. Daily wages for harvest labor decreased much more sharply than rates for other types of farm labor because of the increase in the use of ever more efficient machinery for harvesting and threshing. Day wages with board for harvest work in the North Central States dropped from $1.59 in 1881 to $1.28 in 1894 and recovered by 1899 only to $1.37, although by that date the rates for other types of farm labor were higher than they had been in 1881. Living costs were reflected in the marked divergence of sectional wage rates. From county to county, wages varied in accordance with transportation facilities, the distance to markets, or the competition of factories, mines, lumber camps, or public works for men.[134] Both the prices of farm products and the demand for industrial labor influenced the general ups and downs of farm rates. In the late eighties wages did not fall as sharply as farm prices because the supply of available labor was lessened by the demand for men in industry. Conversely, the unemployment in the cities after 1873 and again after 1893 sent men back to the farms, increasing the supply of farm labor and helping to depress wages. But in the early eighties, when agriculture was prospering, farm wages rose more rapidly than did industrial wages.[135]

The income of the farm worker was not a simple matter of wage rates. The amount of employment he could obtain was of utmost importance. Seasonal unemployment was a well-established characteristic of farm work, even of that performed by the hired man. Although some farm hands were kept through the winter months, at times with board and room the only pay, a majority were without work unless they were lucky enough to

[132] The index of nonfarm wages is from Alvin H. Hansen, "Factors Affecting the Trend of Real Wages," *American Economic Review*, 15:32 (March 1925). The index of real wages for farm labor is computed from Hansen's index of the cost of living and the index of money wages presented above. Since no national cost-of-living index computed exclusively for farm labor is available, the real-wage index presented here is only an approximation.

[133] Adams, *Prices Paid by Vermont Farmers*, 97.

[134] For a discussion of the factors affecting wage rates, see the U. S. Dept. of Agriculture, *Monthly Reports*, 1867, 8–9; and its *Wages of Farm Labor in the United States: Results of Eleven Statistical Investigations, 1866–1899* (Division of Statistics, *Bulletin*, misc. s., 22, 1901), 34.

[135] For trends in farm prices, see Frederick Strauss and Louis H. Bean, *Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869–1937* (U. S. Department of Agriculture, *Technical Bulletin 703*, 1940).

get jobs in the cities or lumber camps. The report of the Missouri commissioner of labor in 1880 indicated that nearly half of the farm hands at work in the summer were left stranded in the winter, swelling the "already over-stocked labor market" of the cities or becoming "tramps." When "their few dollars are spent" they became "inmates of soup houses, for their scant earnings during the summer season are insufficient to carry them through the winter."[136] Reports from other States confirm the prevalence of winter unemployment. The length of the working season varied greatly. Even average employment in the Midwest ranged from 4 to 9 months.[137]

Winter unemployment was a serious matter for farm laborers, but the chronic unemployment during periods of depression was apt to be even more damaging to their security and their financial resources. Moreover, farm workers had to face the competition of the industrial unemployed during depression years. This competition was most disastrous to casual workers, but it also affected more permanent farm labor. Tenants and farm owners who had slipped back down the agricultural ladder added to the scramble for jobs. Contemporary evidence documents the flooding of the countryside during the depression years of the 1870s and 1890s. The job seekers were often greeted with suspicion or antagonism, and when they did find work the compensation was meager.[138] Both after 1873 and after 1893 farm wages dropped more drastically than did industrial wages.[139]

In the boom years of industrial activity during the eighties and early nineties, farm labor did not make wage gains comparable to the losses sustained during the depression years. There were a number of contributing factors in addition to the low farm prices which in certain of these years affected the farmer's ability to pay. Increased use of machinery cut the farm demand for labor and lowered the pay for harvest work.[140] The influx of German, Swedish, and Norwegian immigrants created an oversupply of labor in some sections even when it was scarce elsewhere.[141] Homesteaders with little money made labor abundant in some western counties, while crop disasters coupled with low prices compelled poor farmers "to offer their labor for hire on the farms of their wealthier neighbors."[142] Low farm prices in the eighties caused many farmers who were accustomed to hiring labor to do their own work, exchanging labor at harvest or rearranging their crops.[143]

The years between 1865 and 1900 pushed American farm labor into an increasingly disadvantaged position as compared with other workers or with the hired hand of an earlier period. Even the most privileged of the farm labor force faced low wages, job insecurity, and the loss of farmer-apprentice status. Seasonal workers, the least privileged, swelled the ranks of women and children at work in the fields and confronted problems of transportation, community hostility, inadequate housing, and lack of educational facilities for their families. Worker-employer relationships were changing. Farmers increasingly looked upon wage earners in their fields as a factor in the cost of production; and production costs increased in importance as farming became more commercialized, with its produce destined for distant and highly competitive markets, and dependent for trans-

[136] Missouri Bureau of Labor Statistics, *Annual Report*, 1880, 266.

[137] Ohio Bureau of Statistics of Labor, *Annual Report*, 1879, 1479–1481; Michigan Bureau of Labor and Industrial Statistics, *Annual Report*, 1885, 185; *ibid.*, 1895, 233; Kansas Bureau of Labor and Industry, *Annual Report*, 1893, 676; Nebraska Bureau of Labor and Industrial Statistics, *Biennial Report*, 1897–1898, 274; North Dakota Department of Agriculture and Labor, *Biennial Report*, 1891–1892, 124.

[138] 46 Congress, 2 session, *House Miscellaneous Document 5* (serial 1928, 1879), 22, 23; Moody, "The Bonanza Farms of the West," 41; Illinois Department of Agriculture, *Transactions*, 1879, 461; U. S. Industrial Commission, *Report*, 11:130, 132.

[139] The drop in farm wages during the depression years is discussed in U. S. Department of Agriculture, Division of Statistics, . . . *The Rate of Wages and Labor* . . . (*Special Report 43*, 1882), 11, and *Wages of Farm Labor* (1901), 7; U. S. Industrial Commission, *Report*, 11:128–129.

[140] For the decrease in man requirements in the production of farm crops, see Hadley Winfield Quaintance, *The Influence of Farm Machinery on Production and Labor* (Ithaca, N. Y., 1904); Leo Rogin, *The Introduction of Farm Machinery in Its Relation to the Productivity of Labor* . . . (Berkeley, Calif., 1931); Shannon, *The Farmer's Last Frontier*, 140–144.

[141] U. S. Department of Agriculture, *Report*, 1890, 314; *Report 73* (1890), 202; *Wages of Farm Labor* (1892), 45.

[142] *Wages of Farm Labor* (1885), 29; *Report 51* (1888), 176; *Wages of Farm Labor* (1892), 48, 51, 52, 53.

[143] *Wages of Farm Labor* (1885), 29; *Report 73* (1890), 202.

portation and distribution upon facilities over which the farmer had little control.

The decline in the average farm wage bill from $116 in 1869 to $64 in 1899 suggests that the proportion of farms hiring little or no help was increasing. The drop in the rate of wages was not large enough to explain this decrease. New machinery was enabling the family farm operator to dispense with hired help at the same time that expansion of crops such as fruits, vegetables, and livestock created a greater demand for wage labor.[144] The trend had begun toward concentration of farm labor on larger and more commercial agricultural enterprises. In 1899 farms with crops worth $2,500 or more were only 2.7 percent of all farms, but hired nearly one-third of the man hours of farm labor and paid an average wage bill of $786.[145] Managers operated 59,213 of the Nation's farms, which accounted for nearly 12 percent of the total wage expenditure. Farms of 1,000 or more acres spent an average $1,059 for labor while those of 100 to 175 acres spent $60, and those of 50 to 100 acres only $33. Nearly 150,000 large farms of 500 acres or more were reported by the census enumerators, an increase of 43 percent in the two decades since 1880.[146] In other words, at the end of the period as compared to its beginning, a relatively larger proportion of farm wage earners were hired by farm operators who were entrepreneurs with incomes dependent to a very considerable extent upon managerial functions, capital investments, and the employment of others rather than upon their own work on the land.

Not only were there established by the twentieth century diverse patterns of farm labor with attendant social problems and economic conflicts, but between 1865 and 1900 the nature of farm-labor employment, even for the "typical" farm wage earner, had departed significantly from the apprentice status of the traditional hired man. Farm labor was approaching the essential nature of industrial labor. Moreover as wage earners, farm workers found themselves in a disadvantaged position as compared to their fellow wage earners in industry. Detailed study of the farm-labor problem since 1900, however, may reveal some temporary reversals of the trends here delineated.

[144] See footnote 140 above. The most marked decrease in the man-hours necessary for production was in grains and hay.

[145] Crops not fed to livestock. U. S. Census Office, 12th Census, 1900, *Census Reports*, 5:cxxviii. In 1939 farms with products valued at $10,000 or over were 1 percent of all farms but accounted for 31 percent of the total cash expenditure for labor. Farms with value of products at $4,000 or over constituted 5.2 percent of all farms and paid over 50 percent of the wage bill. U. S. Department of Commerce and Department of Agriculture, *Analysis of Specified Farm Characteristics for Farms Classified by Total Value of Products* (*Technical Monograph*, 1943), 97; Louis J. Ducoff, *Wages of Agricultural Labor in the United States* (U. S. Department of Agriculture, *Technical Bulletin 895*, Washington, 1945), 20.

[146] For the census data used in this paragraph, see U. S. Census Office, 12th Census, 1900, *Census Reports*, 5:xliv, lxix, cxxviii, cxxix. Of the large farms, 57 percent were other than livestock farms.

THE SOCIAL PHILOSOPHY OF HENRY WISE WOOD, THE CANADIAN AGRARIAN LEADER

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Henry Wise Wood, president of the United Farmers of Alberta, 1916–1931, president of the Canadian Council of Agriculture, 1917–1923, and president of the Alberta Wheat Pool, 1923–1937, was born on a farm near Munroe City, Ralls County, Missouri, on May 31, 1861, and died at Calgary, Alberta, on June 10, 1941.[1] Born an American citizen in the slave State of Missouri, at death Wood was a Canadian public figure of many years' standing, a man full of years and honor, a doctor of philosophy, *honoris causa*, a commander of the Order of Saint Michael and Saint George,

[1] Unless otherwise noted the biographical details in this essay are from the obituary in the *Western Farm Leader*, June 20, 1941. Wood was named after Henry A. Wise of Virginia.

and in his own right patriarch and prophet of the organized farmers of Alberta and the larger West.

Nor does such recital exhaust the range of achievement between the far-off birth in the Missouri of Civil War days and the death in Calgary during a greater conflict, or the contrast between the obscurity of Wood's American years and the long public career of his life in Canada. So marked a man was he by 1917 that, in the negotiations which preceded the formation of the Union Government in Canada, he was considered, along with T. A. Crerar, president of the United Grain Growers, for a post in the new cabinet. The proposal was that Crerar should be Minister of the Interior and Wood Minister of Agriculture.[2]

In the event, however, though Wood was summoned to Ottawa, he was not offered a cabinet post, perhaps because the gaunt slow-speaking farmer lacked the address which opens political doors.[3] From that rebuff—if it was such—to a proud and ambitious man, observers who knew both men date the beginning of the long rivalry between Wood and Crerar, a rivalry which split the farmers' movement in politics, which perhaps kept it from power, and which destroyed the Canadian Council of Agriculture.

The subject of this article, however, is not Wood, official leader of organized farmers, but Wood, expounder of class organization and group government.

Here again the contrast between his American and his Canadian years arises. For whereas Wood the farm leader can be interpreted with fair completeness in terms of his Canadian career, Wood the social and political thinker can be explained only by reference to his American background. That background was the agrarian history of the Trans-Mississippi West in the years after the Civil War. Wood was of Southern stock, his family tracing back to South Carolina.[4] His family's memories were of the Old South of slavery and the cotton kingdom, the agrarian South which went down to defeat at Appomattox before the power of the commercial and industrial North. His youth was spent on a Missouri farm, too much of it behind a mule team. He himself became a farmer and for a time a cattle dealer, an occupation which took him up and down the West from Montana to Texas. Thus he was by birthright and upbringing an agrarian.

As such, however, Wood was but one of generations of American frontier farmers who had toiled and died within the simple and narrow limits of an unreflecting individualism and of Jacksonian democracy. The post-bellum generation of farmers was to learn that individualism was not enough and that the principles of Jackson would have to be reinterpreted or discarded.

The victory of the North was a victory for industrialism and a competitive economy, and during the years from 1865 to 1896, from Appomattox to the free-silver campaign, the agrarian order, the frugal and simple rural economy that Jefferson had idealized, followed the South to defeat before an aggressive and expansive industrialism. During these years the farmers turned to three remedies for the ills the new order was inflicting on them, inflationary monetary policies as in the Greenback movement and the agitation for free coinage of silver, industrial organization as in the Grange and the Farmers' Alliance, and third-party movements such as the Greenback and Granger parties. These three lines of endeavor fused in the Populist or People's Party of the nineties, following the low prices and droughts of the eighties, the years when it was said the desiccated hogs had to be soaked before they would hold swill and when Mary Ellen Lease urged the farmers of Kansas to "raise less corn and more hell."

The Populist Party rested on a farmer-labor alliance of the Farmers' and Laborers' Union and the Knights of Labor and after a startling measure of success in the federal elections of 1892 and 1894 was absorbed by the Democratic Party under William Jennings Bryan in the free-silver campaign of 1896. Thereafter it disappeared from the political scene in the United States, though many of the reforms it had advocated were to be adopted during the

[2] See, for example, the statement, "Idea is for Crerar to take Interior and Wood Agriculture," in the code telegram from Sir Clifford Sifton to J. W. Dafoe, Aug. 12, 1917, in the J. W. Dafoe Papers, Library of the *Winnipeg Free Press*.

[3] Opinions differ as to whether Wood was definitely offered a cabinet post. The view here stated is based on an interview with a distinguished colleague who perhaps stood closest to Wood. Cf. Paul F. Sharp, The Agrarian Revolt in Western Canada; A Comparative Study Showing American Parallels (Ph.D. thesis, University of Minnesota, June 1947), 164. "Wood, however, refused to be a candidate for a cabinet position."

[4] Interview with Leonard D. Nesbitt of Calgary, Alberta, the director of publicity for the Alberta Wheat Pool, who knew Wood well and interviewed him frequently and at length.

next generation, and it was to have rebirth in the Progressive movement in Canada in 1919–1921. The essential character of Populism has been stated by its main historian: "The Populist philosophy . . . boiled down finally to two fundamental propositions; one, that the government must restrain the selfish tendencies of those who profited at the expense of the poor and needy; the other, that the people, not the plutocrats, must control the government."[5] Populism, in short, sought to create a militant class consciousness among farmers and workers and to establish direct democracy as far as possible within the framework of representative government.

This was the school of Henry Wise Wood. The details of his American life are not known and must be investigated before his definitive biography is written. But it is known that in 1889 he was a member of the Farmers' and Laborers' Union of Missouri. And the public utterances of his Canadian career make it evident that his social and political thought was greatly influenced by the populist agitation and its outcome. The dangers of farmers' organizations entering politics and the problems of farmer-labor alliances are recurrent themes in his speeches and writings, as they were recurrent aspects of the farmers' movements in Canada.

Populist though he was, Wood, however, was a man of deeper thought and wider vision than participation in that movement might indicate. A man of some formal education, obtained at the local school and in a private school at Munroe City, and at Christian University, now Culver-Stockton College, Canton, Missouri, he was nonetheless a man largely self-educated. Not only were there the debates and discussions of the locals of the Farmers' Alliance and the writings and speeches of the Populist agitation; there were also the English classics and the Bible to be read and brooded on in the long hours of lonely work. And in his Alberta days the share sometimes grew dim at the furrow's end while Wood kept to the house until a new book was read. A list of the books in his library at his death gives an impression of wide and systematic reading. He took his learning from the passing moment; his thought was the product of no school and no system. It was largely his own, labored, gnarled, and excrescent from his personality. In this he was but the archtype of the farm leaders of his generation.

Underlying and informing Wood's political experience and wider thinking was a deep religious sense. A man unorthodox, member of no church, save for a time of the sect of seekers known as Campbellites,[6] he was nonetheless a man moved by religion, and in this lay much of his force. In later years at least he was especially devoted to the Gospel according to Saint John and to the Book of Revelations. "John," he was fond of saying, "taught social reconstruction, and I am a disciple of John."[7]

And if William Blake among the satanic mills of the Industrial Revolution could see the new Jerusalem descending, so might Wood among the foothills of Alberta. This religious sense of Wood's is very relevant, for in his teaching of class conflict and his belief in social harmony through the reconciliation of organized classes, one perceives not the dialectical progression of Karl Marx but something of the rapt organic vision of Revelations. For Wood, like so many of his generation among farm leaders, turned from the narrowness of organized religion and created for himself a religion at once deeply emotional and wholly secular. "The Wheat Pool," he declared, "is just as much a religious institution as the Church,"[8] and to understand Wood one must understand how, for Wood, that statement was simply true.

Such was something of the character and experience of the man, already in his forties, in figure tall and loose-jointed, in voice slow-spoken and deep-toned, in visage much weathered, a man to evoke the epithet Lincolnesque, who in 1905 took up land at Carstairs, Alberta. That was the time when in one final plunging wave the tide of North American settlement set north and overflowed the last free land of the continent. Thousands of American farmers, many of them of Canadian birth or descent, sold their high-priced lands in the United States, where the frontier had come to an end, and moved north to the "last best West."[9] They

[5] John D. Hicks, *The Populist Revolt* (Minneapolis, 1931), 406.

[6] Interview with Leonard D. Nesbitt. The Campbellites were also known as the Church of the Disciples.

[7] *Ibid.*

[8] *Ibid.*

[9] Paul F. Sharp, "The American Farmer and the 'Last Best West,'" *Agricultural History*, 21:65–75 (April 1947). See also R. H. Coates and M. C. Maclean, *The American-Born in Canada: A Statistical Interpretation* (Toronto, 1943), 56. The American-born in the provinces of Manitoba, Saskatchewan, and Alberta num-

brought with them their families and kinsfolk, their cash and livestock, their agrarian sentiments, and their political experiences. Among them Wood was a representative figure, in his Americanism, his agrarianism, and his adaptability. He bought 2 sections of land and farmed on a moderately large scale. He became a member of the Society of Equity, an American farmers' organization which at this time entered Alberta. When in 1909 it united with the Alberta Grain Growers in the United Farmers of Alberta, he became a member of the Carstairs local of the new organization. Like so many former Populists, he found in the Liberal Party of western Canada, with its emphasis on the low tariff proclivities of the national party, a natural political home and attracted some attention at conventions as a speaker and a possible candidate.[10] In 1911, contrary to later hostile allegations, he became a British subject.

There remains, however, little indication of any activity of Wood in politics or in the work of the United Farmers of Alberta until 1915 when he was elected vice president of the organization. The sudden death of the president, the able and scholarly James Speakman, opened the way for his election to the presidency in 1916, the first of fifteen successive annual elections to the office, most of them uncontested. Not until the following year, however, did he attract national notice. It was in 1917, as already noted, that he was suddenly recognized as a speaker of power, a farm leader, and a political force. In the same year he began the exposition of his social philosophy.

This exposition was carried on in speech before farmers' meetings and in writing in the farm periodicals and the daily press. The chief vehicle of his thought was the annual presidential address to the United Farmers of Alberta in convention. Wood used these occasions to comment on developments in the work of the organization and to elaborate or reiterate his teachings in terms of those developments. These, with the occasional writings, fragmentary reports of speeches in rural Alberta, together with an address to the Canadian Club of Winnipeg in 1917, constitute, so far as is known to the writer, the canon of his utterances.

Before the great assemblies of the annual conventions, made up of hundreds of delegates from the locals, assemblies too large for effective discussion, but called to deal with business already debated in the locals and firmly guided by the executive, Wood found his element. Not that he was a man with the forensic itch; on the contrary, he preferred to spend the days of a convention in some back room with a few delegates and a tin of tobacco, his pipe reeking and one long leg wrapped around the other. But when a snarl occurred in the convention or an issue had to be settled, then Wood emerged from his smoke-filled retreat, paced the platform waving his pipe at the audience, and settled the matter with sure mastery of what the Albertan farmer would accept.[11] And in the presidential addresses, delivered in sometimes elevated, sometimes homely, speech, shot through with witty and poetic phrase, he stood forth as what he was, the most thoughtful, eloquent, and earnest farmer of them all. He possessed the same hypnotic command of a mass audience that William Aberhardt was later to develop over a radio audience. All that, however, is but to indicate Wood's manner. The manner served to convey a considerable substance of thought.

The burden of Wood's thinking was the impact of industrialism on modern society and on the farming class in particular. Industrialism, so ran his argument, took its rise in a society which was individualistic and competitive. But the conditions of the new industrialism were such as to place a premium on organization, the cooperation of a given economic group, and the economic interest in which organization was easiest, as of commerce and finance, organized before other classes did. The effect of this organization of certain interests in a society otherwise still individualistic and competitive was the exploitation of the unorganized classes by the organized. Of this exploitation the farmers, as the most individualistic and competitive of all classes, were the principal victims.

Such was the tenor of Wood's address to the Canadian Club of Winnipeg on February 1, 1917. He went on:

> Gentlemen, the problems of civilization are before us: how are we going to deal with them? I presume that if the interests represented in this body of men here to-day were all lined up together, and their buying and selling power analyzed, and the buying and selling interest of the farmer analyzed on the other side, there

bered 20,799 in 1901 and 167,313 in 1911. Of these Alberta had 11,172 in 1901 and 81,357 in 1911.

[10] N. P. Lambert, "The Man from Missouri," *Farmer's Magazine*, an undated clipping in the Wood Files in possession of the Alberta Wheat Pool.

[11] Interview with Leonard D. Nesbitt.

would seem to be a direct conflict between the interests of the farmer on the one hand and the interests of the other men represented here on the other hand, as regards their buying and selling activities.

That is the problem we have got to solve—the problem of the seeming clash between the interests of the farmer and the other interests. How? By strife? By competition?[12]

Wood posed, but did not attempt to answer, this question before the Canadian Club. A few days previously, however, he had spoken more fully in his first annual address to the United Farmers of Alberta convention:

We are a class organization, it is true, but we are the basic class and, I am sorry to say, have suffered many wrongs at the hands of other classes. These wrongs must be righted, every one of them, but we must remember that two wrongs do not make a right, and we must be ever ready to show to all that we are willing to adjust our relationships with all other legitimate classes on the basis of right and justice. Of course any class that does not give a needed service to society has no rights. The only way to accomplish readjustments of wrong relationships is by conflict or treaty. Conflict is clearly justifiable when treaty fails. But I take it that no clear thinking will justify conflict until treaty has failed . . . .

. . . . Class co-operation means inter-class competition. In this competition of class with class ours is the losing class at every turn, because we are the least organized, the least co-operative, consequently the weakest . . . .

. . . . It is feared by some that when we get this power [which organization bestows] we will use it to wrong other classes . . . . [But] we cultivate an ambition to re-adjust all class relationships.[13]

This, then, was Wood's analysis of the conditions of modern civilization. He saw it as dominated by the conflict of organized economic interests. The competitive activities of individuals might, as by the operation of an invisible hand, result in a harmony of interests. But the competition of unequally organized classes could result only in a Darwinian struggle in which the less organized classes were the prey of the more organized.

Yet Wood hoped that from this clash of embattled interests there might emerge an ultimate social harmony. In this he professed no apocalyptic vision of red revolution, resulting by some mysterious catharsis in a new social order at equilibrium within itself. His hope was that, when all economic interests were equally organized, the outcome would be mutual respect and inter-class concord. As he said:

When you get class and class equally efficient in competition, as the less developed classes develop higher, I don't think the conflict in the last analysis will be very destructive. I think that before it reaches the acute stage the better judgment of all will prevail.[14]

This hope he rested on the belief that cooperation rather than competition was the true law and right reason of a democratic social order, and he contemplated no other. The whole outlook is a curious mixture of the social Darwinism of his day and of a millenial optimism which was wholly his own. Hence he is found writing in 1918:

The forces of democracy are just beginning to gather. They are gathering in class organizations. This kind of organization is not democratic in the fullest sense, but I believe it is the only kind that is practical at the present time. Nature takes the course of least resistance. Each of these classes represents a group, the members of which have a common interest in and are affected alike by the problems of trade. Each class first studying these problems from its own viewpoint can much more easily learn the rudiments of trade problems than they could otherwise. Thus they are taking the way of least resistance. But as a truly democratic class comes to understand these problems from its own standpoint it will develop an understanding of them in a broader and more democratic way, and thus all democratic class organizations will gradually converge into a higher and more democratic organization.[15]

Like all social prophets, however, Wood became vague when he attempted to trace the route to the new social order. It is to be remembered that great as was Wood's respect for the science of sociology, great as was his own effort to discover exact sociological laws, he remained preacher and prophet rather than exact thinker. So he con-

[12] Henry Wise Wood, "The Farmer's Viewpoint on National Questions," Canadian Club of Winnipeg, *Annual Report*, 1916–17, p. 47.

[13] *Edmonton Daily Bulletin*, Jan. 23, 1917.

[14] Interview with Frederick Griffin in *Toronto Star Weekly*, an undated clipping in the Wood Files. As stated in Louis Aubrey Wood, *A History of Farmers' Movements in Canada* (Toronto, 1924), 338, Wood aimed at "an equilibrium of interests." He was a student of Marxism but rejected the doctrine of class war with a revolutionary climax. See Sharp, The Agrarian Revolt in Western Canada, 191.

[15] H. W. Wood, "Organization for Democracy," *Grain Growers' Guide*, 11(50):39–40 (Dec. 11, 1918).

cluded the article just quoted with a broad metaphor couched in powerful rhythms:

> Just as the many streams on the mountainside, all taking the course of least resistance, all seeking a common level, all gathering strength as they go, sweep out into the valley till they all find a common level in one great river, and it in turn sweeps on its way of least resistance till it finds the ultimate common level in the sea, so will the units of true democratic class organizations move on, taking the way of least resistance, guided by natural laws of progress, till they all find the common level of national democracy, and then on till the ultimate common level is found in the placid social sea of world-wide democracy.

Discount this as one will, the fact remains that Wood believed in class organization as a means to cooperation between individuals and to social harmony. He was convinced such organization was in accord with what he called "nature's social laws."[16] At the same time he brought to the urgencies of class organization and group politics a detached mysticism and philosophic patience which render him an unusual figure in such an environment. "Young man," he said in his old age, "you are in too much of a hurry. You take too short an arc in the circle of time. When you and I are dead, they will still be debating these problems."[17] Thus, though he foresaw an eventual reconciliation of class conflict, he did not profess to know the hour or the event but only that the way lay through class organization and interclass cooperation.

The next year, 1919, however, saw the beginning of the Progressive revolt from the old parties in Canada. The United Farmers of Ontario captured the government of that province, and the United Farmers of Alberta won a by-election in the provincial seat of Cochrane. In consequence Wood, carried away like every one else by the torrent—"A wave of democratic zeal as a prairie fire before a rising wind, swept over our organization. . . ."[18]—had to devote himself to the application of his philosophy not only to economic organization but also to political action. Yet through these stormy years he continued to return to the bases of his thought, exploring and elaborating further. In the Cochrane by-election, at Crossfield in the great bare valley of the Bow, with the glinting peaks of the Rockies as backdrop, he delivered the first full public exposition of his creed on behalf of the U.F.A. candidate. According to the newspaper report, Wood began his address with a lengthy explanation of his theory of the gradual development of the group or class system, claiming that it was of recent growth during the era of machinery. Wood's thesis the newspaper summarized thus: ". . . there have been two contending principles at work in the world since the dawn of history—competition and co-operation; that competition is the life of autocracy and destructive in its tendencies, and co-operation is the life of democracy and constructive in character. One principle . . . works against the other, each tending constantly to a higher plane through reaction one upon the other. . . ."[19]

But how was this ever intensifying clash of discordant principles to be reconciled? Wood's answer was: by organization of every economic class or interest for cooperation among its members in economic and political action. When all were fully organized, the organized strength of each would prevent the exploitation of any.

> "We go down there [to Edmonton]" and here we have Wood's own words, "as farmers, we ask something we are not entitled to. The other classes are just as thoroughly organized as we, and they will resist any unjust demands, and that resistance of each other will eventually bring them to a common level, on which these great class differences will be settled, and they will never be settled in any other way. . . ."
>
> "Now, I know we are just as selfish, as individuals, as any other class, and I know that if we were organized as a class that we would be inclined to do unjust things, and we are just as bad as any other people and they are just as bad as we are. But when every class is organized, and we come together and find these things will be a resisting force when another class tries to do something wrong, and it is only through the law of resistance that these things will be properly carried out."[20]

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[16] Wood's annual presidential address in the United Farmers of Alberta, *Annual Report*, 1920, p. 8.

[17] Interview with Leonard D. Nesbitt.

[18] Wood's annual presidential address of 1922 in the United Farmers of Alberta, *Annual Report*, 1921, p. 8. The fullest, though not the most effective, statement of Wood's thought is his article, "The Significance of Democratic Group Organization," in the official organ of the United Farmers of Alberta, *The U. F. A.*, 1(1–4), Mar. 1–Apr. 15, 1922.

[19] Clipping from the *Calgary Herald*, Oct. 22, 1919, in the Wood Files.

[20] Clipping of stenographic report in the *Calgary Herald*, Oct. 24, 1919, in the Wood Files. No complete text of the Crossfield speech has been found.

Thus the doctrine of social harmony achieved through organized class conflict was carried to the farmers of Alberta. But the establishment of the United Farmers of Alberta government in Alberta in 1921 and the founding of the Alberta Wheat Pool in 1923, with the contemporary agricultural distress, occupied Wood's attention too fully for him to continue the development of his social philosophy. Not until 1926 did he find occasion, after the return of the United Farmers of Alberta to power in Alberta, to reiterate the teaching of the Crossfield speech. Wood told their convention of that year:

> The only logical hope is that as class competition forced individuals to co-operate to save their class interest and thereby save themselves, classes will likewise be forced to co-operate in industrial construction to save industry and thereby save the classes. When this is accomplished in the different nations there will not only be no logical reason for continuing the competitive conflict between nations, but co-operation will have reached a stage of development where nothing can stop it, until it has asserted its dominion to the utmost parts of the earth, and over all activities of mankind.[21]

And again in 1928 Wood wrote:

> The greatest difficulty in solving social problems is to get the proper adjustments of relationships between all economic interests. Individuals have been hopelessly tinkering with these adjustments for generations without results. The difference between different interests will have to be adjusted by the interests themselves. When each interest is thoroughly organized, and can speak intelligently for itself, there will be hope of intelligent adjustments. The farmers are trying to develop capacity to speak intelligently for agriculture in the adjustment of relationships with other economic interests.[22]

This is the substance of Wood's social philosophy. Its implications and connotations are many and obvious; the relationship to syndicalism, the stress on development and the Darwinian insistence on conflict and resistance, and the groping for some form of organic and pluralistic society. Essentially, however, it was a statement of faith in the virtues of organized cooperation. At bottom Wood was most concerned with the U.F.A. and the voluntary wheat pool, and the slowly developing cooperative skill and spirit they embodied and would have been content merely to rationalize and defend their gradual evolution.

But his was a philosophy wrought out in action, a philosophy growing by application to developing events. Not that he did not value the delights of esoteric philosophizing. Apropos of the launching of the wheat pool, he said in 1924:

> In the past we have been perhaps too prone to fix our eyes on the far-off glimmering light of academic things, and too much inclined to overlook the nearby blazing light of practical things. Perhaps we have been too prone to bay at the moon and sleep in the sunshine. The practical solution of social or economic problems has always been slow and difficult, while the academic discussion of them has always been easy and alluring.[23]

To the practical things he addressed himself.

These developments Wood chose at the time to represent as inevitable outcomes of economic class organization and as definite applications of his social theory. Yet there is no doubt that he was a reluctant convert to the view that political action by the organized farmers was imperative. Nowhere is the result of his American experience plainer than in his fear that the U.F.A. would be wrecked by political action. The U.F.A. in 1917 was strictly nonpolitical and at that time he meant to keep it so.[24] From time to time, even after the decision to go into politics had been taken, he referred to the fate of the Farmers' Alliance and the collapse of the Nonpartisan League in North Dakota.

What, then, led Wood seemingly to change his mind on this point? The plain truth is that his hand was forced, and he chose rather to lead his followers where they were going in any event than to remain fixed by his own doubts. In particular, the invasion of Alberta by the Nonpartisan League, the militantly class-conscious farmers' organization which arose in North Dakota in 1915, threatened to stampede the U.F.A. membership into politics despite their leaders' opposition.[25] But if the

[21] Wood's annual presidential address in the United Farmers of Alberta, *Annual Report*, 1926, p. 4.

[22] Henry Wise Wood, "The U.F.A.," *Calgary Herald*, Jan. 16, 1928.

[23] United Farmers of Alberta, *Annual Report*, 1924, p. 3.

[24] The interview with Wood in the *Edmonton Bulletin*, Jan. 22, 1917, quotes him: "The U.F.A. is strictly not political."

[25] This view is supported by much contemporary evidence, though the opinions of participants now vary as to the influence of the Nonpartisan League in precipitating political action by the United Farmers of Alberta.

movement could not be restrained, could it not be guided?

Thus, fearing the wreck of the U.F.A. if its members formed a farmers' political party, and fearing loss of control if he opposed the demand for political action outright, Wood was driven to his concept of group government. This meant that in taking political action, the U.F.A. should not assist at the birth of a third party but should itself go into politics as an organization. "When I could not keep the organization out of politics, I conceived the idea of going in as an organization instead of a party. I conceived that group government might succeed."[26] This was the doctrine declared in the Crossfield speech. And it was proclaimed in that speech as part of the larger social philosophy of Wood, and this it undoubtedly was, for all his doubts of the outcome of political action. What Wood doubted was not the need of going into politics, but the durability of the U.F.A. under the stress of political action.

For group government meant the political representation by their own elected members of those economic classes, the full organization of which Wood thought necessary to end the exploitation of class by class and to bring about a cooperative commonwealth. Whether the idea had had any immediate origin beyond Wood's own thought and the crisis of the U.F.A. in 1919 is doubtful. The idea itself, of course, had been in the air of political thought since Walter Bagehot had written of "cooperative government" in *Physics and Politics* in 1873. The concept was part of the whole development of modern political thought toward organicism, which ranges from Otto von Gierke's studies of medieval constitutionalism to M. P. Follett's *The New State*, an almost exact contemporary of Wood's promulgation of his theory.

After a notable struggle, Wood imposed his views on the U.F.A., and it was as an organization, nominating and electing its own members only, that the U.F.A. entered politics in 1919, to take over the government of Alberta in 1921 and elect ten federal members out of fourteen in the same year. The organized farmers of Alberta were not, in their own view, a new independent party; they were not a political party at all. They were the U.F.A. in politics, precisely as they were the U.F.A. in any other form of activity.

Springing as it did from this wide-ranging social analysis, the concept of group government was filled with implications for the political circumstances into which it was introduced. To mention some, it required for its full application the economic organization of all classes of producers. It raised serious issues for the practice of cabinet government as known in Canada.[27] It called for a reorganization of the system of representation by the introduction of proportional representation. Upon the individual citizen member of a group it put responsibility for that vital but neglected phase of the democratic process, the nomination of candidates, and responsibility also for the cost and work of elections. The group candidate when elected was a delegate rather than a representative. Finally, group government struck at the heart of the bipartisan party system of North America, with its heterogeneous membership of either of the traditional parties. In short, it assumed an economic transformation of society and, had it been generally applied, would have accomplished a parallel political transformation.

Nothing less, of course, was Wood's purpose. His social analysis included an analysis of the two-party system, and, like all who had known Populism, he held that the two traditional parties were the agencies by which the organized financial and commercial interests consummated their control of the economic life of modern society. They could control the parties because the parties represented nothing genuine. Since the parties were unrepresentative, it followed that there was no real difference between them; hence Wood's remark, probably on the election of 1911, that "The pendulum of the clock without hands has made another swing." Such parties could inspire no positive participation in the democratic process by their members and indeed invited none. The work of democratic politics was therefore left to professional politicians who managed the nomination of candidates and the election of representatives. For this work they required funds, and these were supplied by the organized plutocracy. Thus the parties had become the paid and dependent agents of organized interests which took their recompense in favorable tariff rates, grants of natural resources, and public franchises.

Such was Wood's concept of the working of party

[26] Interview with Leonard D. Nesbitt.

[27] See W. L. Morton, "The Western Progressive Movement and Cabinet Domination," *Canadian Journal of Economics and Political Science*, 12:136–147 (May 1946).

politics. This kind of politics he termed autocracy. Autocracy, or government by the interests through the traditional parties, was the opposite of democracy, or government by the people. It was the political counterpart of competition, as competition was the opposite of cooperation. To found a democratic and cooperative society it was therefore necessary to destroy autocracy, or the old party system. This, Wood hoped, group government would do, and at the end of his life he claimed that the principal result of the entrance of the United Farmers of Alberta into politics had been the destruction of professional politics in Alberta.[28]

Certainly group government was in theory admirably designed to transform the conditions of politics. "Democracy," Wood proclaimed, was "the people in action."[29] But to be effective, the people must be organized around some permanently operating principle of action. What was this to be? Economic interest, answered Wood, the continual and inevitable concern of every human being. "The members of the political party," he wrote, "are continuously shifting from one group to the other, while the membership of the economic group remains permanent."[30] The basis for political action being thus found in the economic group, that action would be taken by the group acting through its own organization on its own membership. This would bring the organized citizens into continuous intelligent participation in politics.

> The political party group is controlled by a few politicians, while the great mass of the membership have no opportunity for self development through active organized effort. The organized economic democratic group is self-controlled, and all its membership is continuously active in trying to build the intelligence of all the individuals into the group.[31]

In the United Farmers of Alberta the process was as follows:

> The district executive decides on the date for holding a convention for the purpose of nominating a candidate, and notifies all the locals. Each local, at the regular or called meeting, selects delegates to attend the convention. The delegates meet, and the convention is called to order by the chairman of the district board, and, after being called to order, it proceeds to organize by the selection of a convention chairman, secretary and the necessary committees. It then proceeds to carry on whatever business may come before the convention, including the selection of a candidate to stand at the approaching elections.
>
> The election of the candidate then becomes the responsibility of the district organization. There is very little necessary expense in carrying on the campaign, but the expense is borne by the voters, and not by the candidate. The candidate is no more responsible for carrying on the campaign than other voters. After he is elected he has nothing to do with operating political machinery, but is expected to give all his time and attention to the duties of his office.[32]

In this way Wood hoped the whole body of organized citizens would enter into the whole democratic process and control it.

Just as representatives are to be freed from electoral responsibilities, so was government to be, and it was expected that it would be able to devote its entire attention to administration, leaving electoral cares to the constituency organizations.

Such a democratic procedure put an unusual burden on the average citizen and no doubt in Alberta as elsewhere much of the work was done by the zealous and the interested. Yet, while the collective zeal of the U.F.A. burned high, it had singular success in Alberta from 1921 to 1935; and when it was replaced, it was not by a return to the old parties but by a new movement which embodied much of the spirit and procedure of the U.F.A.

Like the proposal for the organization of all economic interests, group government raised the question of the interrelationships of political groups. In Alberta, with its mining towns, railway divisional points, and incipient industrial centers, relations between town and country and between farmers and workers were a practical question, involving control of some seats, both federal and provincial. In practice, cooperation was achieved in various ways, such as agreeing on common candidates, and the inclusion of a labor member in the U.F.A. government of Alberta. In theory, Wood spoke in seemingly contradictory terms, but on analysis what he had to say amounts to this: Cooperation was to be desired, but the identity of the economic group organizations must at all costs be preserved, and any confusion avoided. If the

[28] Interview with Leonard D. Nesbitt.

[29] *Grain Growers' Guide*, 12:1367 (July 2, 1919).

[30] Henry Wise Wood, "The U.F.A.," *Calgary Herald*, Jan. 16, 1928.

[31] *Ibid.*

[32] *Ibid.*

economic groups were dissolved or confused, the result might be a farmer-labor party, but that would be a return to the old party system and not group government.

This was an important point, to which Wood often returned, not only because of its theoretical importance, but because of pressure from his followers. However admirable group government might be, the farmers alone could not attain power at Ottawa, yet without control of the federal government, the reforms that the United Farmers of Alberta federal members desired could not be obtained. Among these was control of national monetary and credit policies. Allies were therefore necessary, and it seemed that labor was the obvious ally. When drought and depression in the thirties once more raised the political temperature to the heights of the early twenties, this pressure on Wood increased, and his retirement from the presidency of the U.F.A. and the immediately subsequent founding of the Cooperative Commonwealth Federation, a farmer-labor alliance basically, were not unrelated. While it is true that the new organization was in its inception an attempt to apply Wood's doctrine to a combination of groups, the spirit was different. The Cooperative Commonwealth Federation, properly for a political party, did not content itself with Wood's long perspectives or with waiting for the millenium to be accomplished by group organization but set out to capture national power.

The Cooperative Commonwealth Federation is therefore a true if impatient heir of Henry Wise Wood, a heir which has come under other influences and which might not recognize one of its true begetters. Alberta, the place of Wood's career and teaching, knows not the C.C.F., having been possessed by the Social Credit Party of William Aberhardt. With the doctrines of Social Credit, Wood had nothing to do, beyond initiating political heterodoxy in Alberta. The movement itself he considered transient. "Aberhardt," he said, "won't do any harm."[33] But certain of his disciples had been the first advocates of the Douglas theories, and the Social Credit movement, too, was a product of the United Farmers of Alberta, Aberhardt reaping where they had sown. Wood himself was, it would seem, only mildly interested in the various inflationary ideas of his followers. He had come to the conclusion that what mattered was not so much the volume of money or the credit policies pursued as what he termed "the right relationship of prices."[34] This term he apparently never elaborated, but by it he seems to have meant both what is meant by parity prices and also the difficulties caused by the uneven effects on different economic groups of inflationary or deflationary credit policies. There is also the further implication, suggested by the phraseology, that equitable prices for the products of the various economic groups of modern society would be a prerequisite of the cooperative society he envisaged as arising out of group organization. Whatever his fuller meaning, it is certain that neither the West nor the modern world is done with the problem Wood sensed.

This was the social philosophy of Henry Wise Wood as applied to the economic and political circumstances of his day. Essentially it was a rationalization of the needs and purposes of economic cooperation. It was an attempt to set cooperation in a sociological perspective. Out of the farmers' movement Wood saw a new society arising, more democratic, juster, and more civilized than the fiercely exploitative and competitive society he had known. For his concern was not merely to improve the farmers' lot but to work out the principles of a new social order.

What, then, did Wood in fact accomplish, when all the speeches had been uttered, and all the wry jokes cracked? He helped make agricultural cooperation a permanent feature of the economic life of the West. He left the farmer militantly class conscious. He transformed the conditions of politics in Alberta, with consequences for that province and the Dominion yet to be seen. And he left the memory of a personality, and the echoes of a body of thought, likely long to be an inspirational force in the agrarian West.[35]

[33] Interview with Leonard D. Nesbitt.

[34] *Ibid.*

[35] Or, indeed, more widely. Cf. Arthur M. Schlesinger, Jr., *The Age of Jackson* (Boston, 1945), 505. "American democracy has come to accept the struggle among competing groups for the control of the state as a positive virtue—indeed, as the only foundation for liberty."

A PIONEER ADVENTURE IN AGRICULTURAL EXTENSION

A Contribution from the Wisconsin Cut-Over

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Like every other important human invention, the district agricultural agent had multiple origins. The boll weevil menace in Texas suggested the use of agents to the administrative genius of Seaman A. Knapp and led directly to the modern Extension Service of the United States Department of Agriculture.[1] In Wisconsin an environmental challenge similarly led a less-known but equally great-hearted and imaginative leader to the same solution, with significant consequences. The man was Fred Rietbrock, the place was the tangled cut-over lands of central Wisconsin, and the time was 1905, the year after Knapp first employed demonstration agents in his struggle to reinforce Texan cotton husbandry.

Rietbrock was a farm-born Milwaukee lawyer, the son of a German immigrant. The aftermath of the panic of 1873 concerned him; he saw the effects of industrial unemployment among the recent immigrants in Milwaukee and concluded that most of them had small chance of prosperity. Industry offered them limited opportunities to rise, and even his success as a lawyer, he felt, exacted a high cost by reducing him to the position of a hired man. "The farmer holds the middle position," he told a convention of the Wisconsin Dairymen's Association, for they avoid abject poverty and possess independence.[2]

So in 1877, when a lawsuit brought him to Wausau, Rietbrock stayed and searched over the newly-cut forest lands of Marathon County. In the name of his law firm of Johnson, Rietbrock, and Halsey he purchased about 30,000 acres of land and began his thirty years of promoting settlement, organizing community enterprises, developing his own great dairy farm, and wandering through the woods scattering clover seed in the open spaces.[3]

Rietbrock made his holdings and his farm, centering around the village of Athens in the northwestern part of Marathon County, the scene of his avocation. A daughter married one of his neighbors, William Erbach, and they carried on at Helendale Farm after his death. He shared the enthusiasm of many others for the frontier lands of northern Wisconsin and repeated their optimistic predictions about the agricultural possibilities of the region. He declared that all crops would grow there, but he was careful to follow the leadership of William Dempster Hoard and his associates in the Wisconsin Dairymen's Association, who had forcefully urged that its real future lay in exploiting the bountiful growth of grasses with the dairy cow.[4] He therefore acquired a herd of purebred Guernseys selected from the best herds he could find. One of them, Yeksa Sunbeam, from the herd of A. J. Philips of West Salem, was the champion of her day.[5] But his avocation did not become a

[1] Joseph Cannon Bailey, *Seaman A. Knapp, Schoolmaster of American Agriculture* (New York, 1945), 187–199.

[2] Wisconsin Dairymen's Association, *Annual Report*, 1905, p. 22–25; *Hoard's Dairyman*, 37:676 (Aug. 3, 1906).

[3] Wisconsin Dairymen's Association, *Annual Report*, 1905, p. 22; Kate Asaphine Everest, "How Wisconsin Came by Its Large German Element," Wisconsin State Historical Society, *Collections*, 12:332–333 (Madison, 1892); interview with C. L. Hill, July 11, 1946; G. W. Burchard, secretary of Wisconsin Dairymen's Association, to Fred Rietbrock, Milwaukee, Dec. 29, 1902. Rietbrock tried to persuade Hill to join him in his project and offered him a farm partially cleared, with buildings, and reserved 10 quarter sections for him. Hill was already a well-known Guernsey breeder, working with his father on their Rosendale farm.

[4] Wisconsin Dairymen's Association, *Annual Report*, 1885, 1896, and 1903, p. 158–172. The association's work had stimulated dramatic demonstrations of dairy possibilities in the nearby west-central counties of Trempealeau and Chippewa. Rietbrock tried regular harvesting of timber, but fires and a rise in land prices made this unprofitable.

[5] *Ibid.*, 1907, p. 16; *Hoard's Dairyman*, 33:917 (Dec. 12, 1902), 35:163 (Mar. 25, 1904).

vocation. He remained a lawyer, counseling the settlers in their projects and investing his funds with theirs, and left farming to others. He stood up in convention and admitted his ignorance by asking what was meant by the denting of corn.[6]

Rietbrock's forthrightness about his own ignorance made it easier for him to see the value of expert assistance. By 1905 the Wisconsin College of Agriculture had accumulated a body of knowledge and a staff of scientists whose potentialities had been well advertised by Professor Stephen M. Babcock's milk-fat test. It was on the verge of a great harvest of the fruits so laboriously tended by Dean W. A. Henry and the associates he had so discerningly selected.

On the other hand, the Athens community was just getting "out of the woods." Farms had been partially cleared, cattle acquired, and sheds put up. All of this had been hastened by Rietbrock's planning. He persuaded the Brauns, Kreutzers, Erbachs, Blechas, Degners, Lonsdorffs, Chesaks, and the others of his neighbors to buy stock with him to set up a brick works which would buy dead wood for fuel, a hub factory to use elm, sawmills for the timber, and a railroad which switch-backed its way to the Wisconsin Central line and the Nation's markets. These sources of income, and winter wages paid by his own lumber enterprises, had carried the neighborhood along to a point at which farming could begin. It was still a struggle, however. Shortly before, a group of fifty settlers with their pastor had been persuaded to come from Lancaster County, Pennsylvania; Rietbrock's crews had cleared garden space and built cabins and sheds for them, but they were dismayed at the prospect of logging in the winter and grubbing their land in the summer, and they left. In 1905 their cabins were empty, and thereafter settlers were recruited from the harder environment of Milwaukee. They could work; farming skills must be supplied.

Rietbrock thought he could find a source of knowledge, and he was prepared to make sacrifices for the success of the enterprise. He had little thought of self. A. J. Philips related that he heard him refuse an offer of $2,000 for Yeksa Sunbeam. "No, I am not developing these high producing cows for the money there is in it, but to show the 7,000 people, who I have been instrumental in getting into this county, that it is possible to raise the best of cattle on these cut over lands, make dairying pay, and establish a Guernsey center second to none in the state. . . ."[7] Prestige mattered as little to him as profit; when a group of Polish settlers proposed to name a village in his honor, he made them a speech about their great patriot Poniatowski and suggested that it be named for him, which they did.

The Athens Advancement Association met in February 1905, just after the Wisconsin Dairymen's Association had held its convention in Wausau, to hear a new proposal. P. J. Drissen, the herdsman of Helendale Farm, read it: to hire a dairyman to visit the farms within 4 miles of the village to make milk-production and fat-test records and offer assistance on other farm problems. He was to spend a day with each farmer at no expense except his board and room. This was immediately adopted.[8] Rietbrock then went to the College of Agriculture and interviewed D. O. Thompson in the office of Professor George C. Humphrey of the animal husbandry department. He asked Thompson to take up this work as soon as he had graduated and offered him a good salary: $50 a month, and a living at the Helendale Farm boarding house when he was not out on his circuit.

The inaugural took place on July 6, 1905, at a great picnic celebration and "Agricultural and Dairy Course" at Athens to which came C. L. Hill and A. J. Philips of the Western Guernsey Breeders' Association (which had met there in 1903), Professor T. L. Haecker of the University of Minnesota, and Professors George C. Humphrey and R. A. Moore of the Wisconsin College of Agriculture.[9] Professor Haecker commented that this was the first instance of a community organization of agricultural instruction, and he added an exhortation to his German compatriots to drop their prejudices and learn from a "collar and cuff" man. Professor Moore, whose career in extension work had a luster equaling Haecker's, added that he hoped this new enterprise would be emulated in every county in the State. Thus was the College of Agriculture's attention directed toward the

[6] Wisconsin Dairymen's Association, *Annual Report*, 1905, p. 163.

[7] *Hoard's Dairyman*, 37:129 (Mar. 9, 1906).

[8] Athens *Record*, Feb. 23, 1905.

[9] *Ibid.*, July 13, 1905; *Hoard's Dairyman*, 34:422 (June 12, 1903). Rietbrock took seventy-five people from southern Wisconsin, including Hoard, in a private car from Milwaukee to the 1903 meeting.

system of local representatives which it adopted in 1911.

The next day Thompson was given his working equipment—an 8-bottle hand Babcock milk tester, with pipettes, acid, etc., and a spirited bay mare and a buggy—none of which he used for the first six weeks. He started out on foot with a couple of notebooks and made a clearing-to-clearing survey of the area; he took a human, livestock, and cleared-land census of the four townships adjacent to Athens, got acquainted, and gave the settlers time to talk things over. During this time he talked cows and cow differences. Then one day he took out the testing machine and started testing cows, following the pattern of Advanced Registry testing. Scales and record sheets were put up in a few barns and that made more talk—much funny, but some serious. Soon such subjects as the variations in the tests of different cows and their butterfat yields for the month were getting into the family and neighborhood talk—in the church yards or in the saloons. When both the ministers and priests, and the saloon keepers, comprising twenty or more leading citizens of the area, said this young fellow was all right, he was finally taken in as one of the people, and work went easier from then on.[10]

While the cow-testing work was not so definitely organized as it was in Michigan, where it was initiated later in 1905, nevertheless, the association did have fundamental rules about sampling, milking regularly, and keeping records of weights, and following through so that the complete production for a year might be determined. To get regular testing service, the settler had to pay yearly dues of $1.00 into the Athens Advancement Association. Rietbrock made up deficits when they occurred.

Cow testing was but part of Thompson's work. The Helendale Farm's herd and its management then served as a demonstration. He took many a settler for a buggy ride to the farm and showed him the cows and their Advanced Registry records, and explained proper feeding for high production. Most of all, he displayed the herd of bulls. Rietbrock had two bull propositions for the settler who had advanced far enough to merit them. First, he might buy almost any bull calf on the farm for $25 if he would agree to raise him according to directions, and not sell him until Rietbrock had a chance to buy him back sometime after he was 2 or 3 years old, or when he needed another bull to mate with his first crop of heifers. Second, if he would build a safe bull shed and pen, he might have the use of his choice of mature Helendale bulls in exchange for keeping the bull and making his service available to the settlers of his neighborhood who lived close enough to lead over a cow to breed her. There was some reservation on the Helendale bulls available, for some had to be kept at the farm for regular service, but at one time Rietbrock had 14 well-bred bulls above two years old in service under this second plan in the four townships surrounding Athens.[11] Part of Thompson's responsibility was to follow through on the raising of the heifer calves from these bulls—and discouraging the desire to raise the grade bull calves for herd sires.

To encourage the raising of good heifer calves the Athens Advancement Association held a cattle and horse show in Athens each fall, around the public square, sometime before the Marathon County fair. Crops and produce were added to this, and from it the association selected entries for the various exhibits in the county fair at Wausau. Rietbrock allowed himself to be persuaded, against prudent doubts as to the dangers involved, to show his famous herd there, too. Yeksa Sunbeam was at the time just finishing a record-breaking test.[12] These shows were gala events. The association helped establish classes for grade Guernsey females at the county fair, so that settlers having good grade cows and young stock could have a change to show. The more ambitious and foresighted started buying a few purebreds, as a matter of pride, and hoped for profits.

Within a month seventeen farmers with 136 cows were testing their herds regularly, and in fact a cow-testing association was started. But this did not fulfill the hopes placed in Thompson's work. Rietbrock had made it clear in March, when Thompson came to Athens to talk over the job, that an expert should not be tied down to a routine job like testing milk but should teach the farmers how to do the job and then look for more herds to test or other problems to tackle.

A series of educational meetings was one obvious enterprise for a stalwart and hearty young man who loved football, boxing, and wrestling, and who

[10] Athens *Record*, July 20, 27, 1905. The "dairy census" was a device used by *Hoard's Dairyman* for some years to show the variations possible in the yields of dairy farms.

[11] *Hoard's Dairyman*, 37:606 (July 13, 1906).

[12] Wausau *Pilot*, Aug. 15, 1905.

found the games of lumberjacks more virile than basketball. Most of the grown men who were not too old worked in the logging camps during the winter months. But because these camps were owned by the Rietbrock Land and Lumber Company, or by the Braun Brothers, or by others equally interested in the Athens Advancement Association, those in camps would find diversion for a winter evening in attending the "cow" meetings held in one-room schoolhouses. There were thirteen one-room schoolhouses in the four townships, and once a month during the winter a meeting was held in one of them. In these meetings, Thompson gave testing demonstrations, talked about feeding, about crops that the university was trying out, and so on. Always, the text was that if they farmed with the best aids science could give them and did their best, Athens and its four townships would become known as a place where there were farmers who knew how to raise good dairy cows, and men from afar would come to buy those cows not needed on the home farms.

The meetings combined entertainment with education. Adolph Neuenschwander, later editor of the Athens *Record*, was then a high school student. He led the school orchestra and played the violin. He and his younger brother came to the meetings and opened them with half an hour or more of music and singing. And sometimes that went on too long, for when a bunch of lumberjacks and a few ex-lumberjacks who were trying to learn how to become successful farmers, got into a community sing, led by Adolph with his fiddle, it was hard to stop. At times other leaders in the Athens Advancement Association would attend. Rietbrock came up from Milwaukee to speak in German at the meetings; he attended several on successive nights when the temperature was 20 to 40 degrees below zero, and the sled runners sang a merry tune on the icy road as his party drove home under the frozen full moon and cold snapping stars. He would talk through his gray beard from the depths of his fur coat collar, picturing the good farming that was sure to follow if the settler was taught how to use successfully the farming advantages with which nature had endowed this area. The eleven meetings of the season ended with a "round-up" (a borrowing from the farmers' institutes), to which Rietbrock sent greetings: "Just think of me out here in California and know that I am picturing to myself Athens as it will look on March 31st. My best wishes and hopes for a large attendance and most beneficial meeting are with you all."[13]

In addition to the meetings, the press was regularly furnished with reports of the association's work, Thompson's notes on good farm practices which he had observed, and technical articles drawn from the College of Agriculture publications and agricultural magazines. Thompson, who was to edit the Athens *Record* for a time before he left the community, devoted whole pages to the reports of meetings which papers throughout central Wisconsin closely followed.[14] Such matters as better roads were discussed. The King split-log drag for improving dirt roads became such a heated subject that Thompson was assigned a couple of blocks of street in the village and told to keep it passable with the split-log drag. So he demonstrated one Saturday, when the village was filled with people, how to build a split-log drag. When it was made, he got a good team of loggers from the Rietbrock farm and showed how to use it. Two blocks were dragged regularly during a whole summer, and as a result many a settler followed the practice of dragging the road from his front gate to the next front gate toward town. Barn ventilation was another of his projects. He demonstrated the King system many times, and a number were installed. He supplied the answer to subscribers' questions on technical problems, such as the use of concrete, by consulting with the agricultural college staff. And he found the time favorable to urge the settlers to drop their winter work in the lumber camps and instead to develop their own lands. He urged that a regular cream check was better than winter pay checks from the camps. To the protests that there was no good market for dairy products, a final answer was made by the organization in December 1905, of a co-operative creamery company.[15]

[13] Athens *Record*, Mar. 31, Apr. 5, 1906. The authors are indebted to Adolph Neuenschwander for his search of the *Record* for these items, and for his suggestions on various points.

[14] *Ibid.*, Mar. 9, 23, Aug. 3, 10, 17, 1905; Wausau *Pilot*, July 25, Aug. 8, 1905, Mar. 4, Apr. 3, Sept. 11, 1906, Jan. 15, 1907; *Taylor County Star-News* (Medford), Feb. 23, Apr. 6, 1906.

[15] Athens *Record*, Dec. 7, 14, 1905. During the opening season Rietbrock paid the Wisconsin Dairymen's Association $54.15 for work done in the vicinity by an inspector-instructor. The association's inspectors assisted both factory men and farmers to improve the quality of their product. Wisconsin Dairymen's Association, *Annual Report*, 1906, p. 187.

In the middle of Thompson's three years in Athens, Rietbrock became ill and died at the home of his son-in-law, William Erbach, in Athens. Erbach's home was on the hill across Black Creek from the village and the Abbotsford and Northeastern Railway station. Funeral services were in the Erbach front yard. All the townspeople and settlers gathered. Father Muehlenkamp gave a short simple talk, summing up what Rietbrock had had in his heart for the community. Then through the front gate the pallbearers carried the coffin to the railroad station where the train waited. They and all the people marched over a deep carpet of hemlock twigs and fronds of fern and brake from the forest, which the people had laid as a simple token of their esteem for their foremost citizen. The coach was lined with greens and, taking with him these first products of the land he loved, he went out over the railroad he had built to this village in the great woods.

Athens did become a dairy center. In 1923 *Hoard's Dairyman* noted that many herds had sprung from Rietbrock's start and that ten carloads of grade Guernseys had been shipped from Athens during the previous year.[16] Thompson, who left in 1909 to become an instructor at Purdue University and then an editor of the *Prairie Farmer*, more than once had the great pleasure of discovering that Athens was the dependence of breeders in many places. Upon tracing the source of some good-looking Guernseys around Lebanon, Indiana, he found that they had been brought in by boys' and girls' calf clubs. He asked where they had gotten the calves. "Up in Wisconsin," was the reply. "Just where?" he asked. "Well, you probably never heard of the place, but up around a little town of Athens in Marathon County. That's where we got them—and they were good." Even more important, Wisconsin had had the experience of a local agricultural agent.

[16] *Hoard's Dairyman*, 64:774 (Jan. 12, 1923).

NEWS NOTES AND COMMENTS

THE 1947 ANNUAL MEETING

The Agricultural History Society held its 1947 annual meeting in the Conference Room of the National Archives in Washington, D. C., on September 3 at 8:00 p.m. Professor Earle D. Ross, the Society's president, presided.

At the business session, Charles A. Burmeister, the secretary-treasurer, read the minutes of the previous annual meeting and presented the financial statement. Everett E. Edwards, the editor, reported on the journal and the joint meetings with other organizations. Charles E. Gage, representing the committee on honorary memberships, presented the report of this committee. After brief discussion it was voted to refer this report to the executive committee. Lois Olson, chairman of the committee on awards, presented a progress report. Arthur R. Hall, representing the nominating committee, reported that 85 ballots had been returned and that the following were elected for the year, 1947–48: president, Frederick Merk; vice president, Rodney C. Loehr; secretary-treasurer, Charles A. Burmeister; executive committee, James C. Bonner and Nannie M. Tilley.

Following the business session, Earle D. Ross, the society's president, presented his address on "Parity in Our Agricultural History."

DECEMBER 1947 MEETINGS

The Agricultural History Society met with the American Historical Association and other historical organizations at Cleveland, Ohio, on December 27–29, 1947.

The Agricultural History Society's luncheon was held at the Hotel Cleveland on Saturday, December 27. The address of the speaker, A. N. Duckham, Agricultural Attaché, British Embassy, Washington, D. C., was entitled "Liberty, Progress and Security: Fifteen Centuries of British Agriculture." Frederick Merk of Harvard University, the Society's president presided.

The Agricultural History Society's joint session on Saturday afternoon in the library of the Western Reserve Historical Society was devoted to the reading and discussion of three papers: "Agriculture in the Undrained Basin of Asia," by George W. Anderson, University of Minnesota; "The Condition of Rural Economy in Northern France and the Bavarian Palatinate, 1815 to 1830," by M. L. Flaningam, Purdue University; and "Europe's Recurring Land Problem," by V. Alton Moody, Iowa State College. Rodney C. Loehr of the University of Minnesota, the Society's vice president, presided at this session.

The programs for these sessions were arranged by a committee consisting of Rodney C. Loehr (chairman), Harold E. Briggs, Robert G. Dunbar, V. Alton Moody, and Theodore Saloutos.